RULES

FOR

DRAWING

The ſeveral PARTS of

ARCHITECTURE,

IN A

More exact and eaſy manner than has been heretofore practiſed, by which all FRACTIONS, in dividing the principal MEMBERS and their Parts, are avoided.

By JAMES GIBBS.

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MDCCLIII.

TO THE

RIGHT HONOURABLE

EDWARD

Earl of *OXFORD*

AND

Earl *MORTIMER*,

Baron *HARLEY* of WIGMORE, *&c.*

My LORD,

YOUR Lordſhip's extenſive Knowledge and good Taſte command the Eſteem of all that profeſs or love the Liberal Arts and Sciences; but more immmediately of thoſe who are perſonally known to Your Lordſhip.

I ſhould ſhew myſelf unworthy of that Honour, did I omit this Opportunity of publickly teſtifying my Regard to ſo generous and univerſal a Patron, as well as the grate-

ful

ful Senſe I ſhall ever retain of particular Obligations : To which Your Lordſhip will ſtill add by receiving the following Sheets into the ſame Protection, with which the Author has been always honoured.

I am with the greateſt Reſpect,

My LORD,

Your Lordſhip's

Moſt obliged and

Moſt obedient humble Servant,

JAMES GIBBS.

TO THE

READER.

UPON Examination of the common ways of drawing the Five Orders of Architecture, I thought there might be a Method found out ſo to divide the principal Members and their Parts, both as to their Heights and Projections, as to avoid Fractions. And having tried one Order with ſucceſs, I proceeded to another, till at length I was ſatisfied it would anſwer my intention in all; and I doubt not, but that the Method here propoſed will be acknowledged by proper Judges to be the moſt exact, as well as the eaſieſt, that hath as yet been publiſhed.

I have here ſufficiently explained the Arcades and Intercolumnations of each Order, and ſet down a Rule for placing Orders above Orders. I have alſo given Rules for drawing Doors, Gates, Windows and Chimmey-pieces of different kinds, Cornices and their Profiles, Architraves, Baſes, Impoſts, Surbaſes, Frames for Pannels or Pictures in Rooms and other ſorts of Mouldings and the Proportions of Balluſters; as alſo Scrolls, Frets or *Guilochi's*, and Pannelling for Cielings, both Flat and Circular.

In the common manner of drawing the Orders, the Diameter, or ſometimes the Semidiameter, of the Column, is called a Module; and this Module is divided into Parts or Minutes, as into twelve, eighteen, twenty four, thirty and ſixty parts, according to different Authors. *Palladio* in dividing and adjuſting his Orders, has no doubt excelled the reſt, whom I have therefore followed. He has divided the Diameter of his Column, which he calls his Module, into ſixty Minutes, and ſubdivided them into Seconds,

Thirds, and Fourths. This is ſuppoſed to be the Method of the Ancients in compoſing their Deſigns; but it is very difficult to Beginners and ſuch as are but little ſkill'd in Arithmetick: And certainly the parts conſiſting of ſo many Fractions may occaſion miſtakes in thoſe who copy the Orders of *Palladio*; beſides the difficulty of dividing thoſe ſmall parts with Compaſſes. But by this method of dividing the Orders Mechanically into equal parts, Fractions are entirely avoided; which will be found ſo beneficial to Workmen in drawing any part at large (as ſhall be explain'd by the following Directions) that when they are once accuſtomed to it, they will never follow any other. But before I proceed to the Explanation of the Plates, it may not be improper to premiſe ſomething in general touching Columns, and their Entablatures and Pedeſtals.

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RULES

RULES

For Drawing the ſeveral Parts of

ARCHITECTURE, &c.

Of COLUMNS and their Meaſures.

IN all Compoſitions of Architecture, the Column, being the principal Figure, ſhould be perfect in its Proportions, as they are taught us by the Antients, *viz.* That the height of the Column ſhould be meaſured by its Diameter without a Remainder; that is to ſay, the height of the Column ſhould conſiſt of ſuch a number of times its Diameter without a Fraction, according to the different Proportions of each Order; of which there are Five, none exceeding ten Diameters in height, nor leſs than ſeven: Thoſe of eight and ten are accounted perfect, and the firſt invented by the Antients; the reſt are inferior. Their Names and Proportions are as follow, including Baſe and Capital:

The *Tuſcan* is in height 7 Diameters,
The *Dorick* —— —— 8 Diameters,
The *Ionick* —— —— 9 Diameters,
The *Corinthian* —— —— 10 Diameters, and
The *Roman* or *Compoſite* 10 Diameters.

Of ENTABLATURES.

HAVING ſettled a Rule for the Proportions of Columns, the Entablatures muſt bear a proportion to them in each Order; for which *Palladio* has given a Rule which cannot undergo any conſiderable change, without altering the juſt Proportions of Columns. He makes the Entablatures of the *Tuſcan* and *Dorick* to be to their Columns as one to four, and the *Ionick*, *Corinthian* and *Compoſite*, as one to five. The Proportion of the Entablature in each Order is explained as followeth:

One Diameter and $\frac{1}{4}$, is the height of the Entablature of the *Tuſcan* Order; which is $\frac{1}{4}$ of Seven Diameters. Two Diameters is the height of the Entablature of the *Dorick*; that being $\frac{1}{4}$ of Eight Diameters. One Diameter and $\frac{4}{5}$ is the height of the Entablature of the *Ionick*; which is $\frac{1}{5}$ of nine Diameters. Two Diameters is the height of the Entablature of the *Corinthian* Order; that being $\frac{1}{5}$ of Ten Diameters. The Entablature of the *Compoſite* has the ſame proportion with that of the *Corinthian*.

Of Pedestals.

THE Entablature being a part proportionable to its Column, and the Pedeſtal an addition to both, it ſhould be conſidered as a part of the Column and Entablature taken together; therefore the height of the Column and Entablature being divided into four equal parts, one of them ſhall be the height of the Pedeſtal. This Rule is to be obſerved through all the Five Orders, by which the Pedeſtal will have an agreeable effect with the Whole and all its Parts. *N. B.* The Pedeſtal may be made lower when neceſſity requires, but not otherwiſe.

Of the Five Orders in general, and their principal Parts.

Plate I.

THE Five Orders in general are each divided into three principal parts from the Baſe-line upwards, and are named as follow;

A B, the Pedeſtal,
B C, the Column,
C D, the Entablature.

Each of theſe is divided into three eſſential Parts, *viz.*

1. The Pedeſtal into	2. The Column into	3. The Entablature into
1. *a b*, the Baſe,	*d e*, the Baſe,	*g h*, the Architrave,
2. *b c*, the Die,	*e f*, the Shaft,	*h i*, the Frize,
3. *c d*, the Cap.	*f g*, the Capital.	*i k*, the Cornice.

Other ſmaller diviſions are called Members, whether they be Square or Curvilinear, and are more or leſs in number according to the ſeveral Orders; as will be obſerved particularly in the Explanation of each of them.

The general Proportions of the Tuscan Order.

Plate I. N°. 1.

TAKE any height propoſed for this Order upon a ſtraight line, and divide it into five equal parts; one of thoſe parts ſhall be the height of the Pedeſtal, according to the outer diviſion of the Scale on the left hand. Then divide the other four parts above it into five parts, according to the inner diviſion of that Scale; the upper fifth part ſhall be the height of the Entablature, and the other four parts betwixt the Pedeſtal and Entablature, ſhall be the height of the Column, including its Baſe and Capital; and this height being divided into ſeven parts, one ſhall be the Diameter or thickneſs of the Column. The Baſe and Capital are each in height a Semidiameter of the Column. The Entablature is divided into ſeven parts; two of which go to the height of the Architrave, two to the Frize, and three to the Cornice. The Column muſt be divided into three Parts; from the top of the lower diviſion, it is diminiſhed at the upper part $\frac{1}{5}$ of its Semidiameter on each ſide. From the diminiſhed part draw two upright lines parallel to the middle line, through the Capital and Entablature, and from thoſe lines mark the Projections of the Capital, Architrave and Cornice. The Diameter of the Column at the ſmalleſt part a-top being divided into four equal parts, one of them is the projection of the Capital. The Architrave pro-

 jects

jects $\frac{1}{6}$ of its height; and the height and projection of the Cornice are equal. The Baſe of the Column projects on each ſide $\frac{1}{3}$ of its Semidiameter. From the extremity of the projections of the Baſe, let fall on each ſide a line to the bottom of the Plinth of the Pedeſtal; that will give the breadth of the Die. Divide the height of the Pedeſtal into four parts; one is the height of the Plinth, half the height of one of them is the height of the Cap, and one third of one of them is the height of the Baſe of the Pedeſtal. The projection of the Baſe is equal to its height, and the Cap projects the ſame as the Baſe. This Paragraph well underſtood will make the reſt eaſy.

The general Proportions of the DORICK Order.

PLATE I. N°. 2.

TAKE any height upon a ſtraight line, as in the *Tuſcan* Order, and divide it into five equal parts; one of them is the height of the Pedeſtal: The other four parts are to be divided into five parts, one of which is the height of the Entablature; and that height is divided into eight parts, two of which give the Arthitrave, three the Frize, and three the Cornice. The height of the Column is divided into eight parts, one of which is the Diameter of the Column. The Baſe and Capital are each in height a Semidiameter of the Column. The Baſe of the Column projects on each ſide $\frac{1}{3}$ of the Semidiameter; which gives the breadth of the Die of the Pedeſtal. The Baſe and Cap of the Pedeſtal, as to their heights, are the ſame as in the *Tuſcan* Order, as alſo their projections. The Column diminiſhes $\frac{1}{6}$ of its Semidiameter on each ſide from the third part of its height to the top. The Capital projects $\frac{1}{4}$ of the Diameter of the Column at the ſmalleſt part. The Architrave projects $\frac{1}{6}$ of its height; and the projection of the Cornice is equal to half the height of the whole Entablature.

The general Proportions of the IONICK Order.

PLATE II. N°. 3.

TAKE any determined height, and divide it into five equal parts; one of thoſe parts is the height of the Pedeſtal, as in the foregoing Orders; the other four being divided into ſix parts, one of them is the height of the Entablature. The height of the Column being divided into nine parts, one of them is the Diameter of it. The Baſe and Capital are each in height a Semidiameter of the Column. The Column diminiſhes on each ſide $\frac{1}{6}$ of its Semidiameter. The projection of the Baſe is $\frac{1}{3}$ of the Semidiameter of the Column; and that determines the breadth of the Die of the Pedeſtal. The other parts of the Pedeſtal are as in the *Dorick* and *Tuſcan* Orders. The height of the Entablature is divided into five parts, one part and a half is the height of the Architrave; the Frize is of the ſame height with it, and two parts give the height of the Cornice. The Architrave projects $\frac{1}{4}$ of its height. The Projection of the Cornice is equal to its height. The Capital projects on each ſide one half of the Semidiameter of the Column.

The general Proportions of the CORINTHIAN and COMPOSITE Orders.

PLATE II. N°. 4 and 5.

THE whole height is divided into five parts both in the one and the other, one of which is the Pedeſtal; and the other four parts over it are divided into ſix, one of which is the height of the Entablature. The height of the Column being divided into ten parts, one of them is the Diameter of it. The height of the Capital is one Diameter and $\frac{1}{6}$; the other dimenſions are as in the *Ionick* Order.

The TUSCAN Pedeſtal with part of the Column and its Baſe.

PLATE III.

A, The Shaft of the Column.
B, Liſt.
C, *Torus*.
D, Plinth.
E, Platband.
F, Ogee.
G, Die of the Pedeſtal.
H, Fillet.
I, Ogee reverſed.
K, Plinth.

The height of the Pedeſtal being divided into four parts, as was ſaid before, one goes to the Plinth, half of that height is the *Cima* or Cap, and $\frac{1}{7}$ of it is the Baſe; the projection of the Baſe is equal to its height, as is deſcribed by a Quadrant on the Baſe, and the Cap has the ſame projection. For the leſſer diviſions, ſee Plate XXIV for the Baſe and Cap of the Pedeſtal, and Plate XXV for the Baſe of the Column.

This Method ſhall be obſerved through the Five Orders of referring to the Plate, where each Member is drawn at large, with the Geometrical Rule to form it. And it is to be further obſerved, that the Plates of Pedeſtals and Entablatures ſhew the larger or groſſer diviſions, and the proportion one part bears to another; as for example, how many parts the Cornice is in proportion to the Architrave and Frize, and the Cap to the Pedeſtals; as alſo how the members are to be enriched: But when the particular parts are to be exactly drawn, recourſe muſt be had to the Plates referr'd to, where they are drawn at large; as the Baſes, Caps, Architraves, Cornices, &c. and you are not to truſt to the ſmall diviſions marked here on the Plates of Pedeſtals and Entablatures.

The Entablature of the TUSCAN Order, with the Capital and part of the Column.

PLATE IV.

THE height of the Entablature is divided into ſeven parts; two go to the Architrave, two to the Frize, and three to the Cornice. The Cornice projects as much as it is in height, and is divided into three principal parts; for which I muſt refer you to the next Plate, where it is drawn at large, and for the Architrave to Plate XXVI.

Names

Names of the Members of the Entablature.

A, *Cimarecta* with a Fillet.
B, *Corona* with a Liſt over it.
C, *Ovolo* or Quarter-round.
D, *Cavetto* with a Fillet.
E, Frize.
F, Liſtel.
G, Upper *Faſcia*.
H, Lower *Faſcia*.
I, *Abacus*.
K, *Ovolo*.
L, Frize of the Capital.
M, Aſtragal.
N, Column.
O, Platform of the Cornice.

The TUSCAN Cornice at large.

PLATE V.

IN this and all other Cornices, the larger diviſions are parts of the whole Entablature. The manner of drawing it is this: Draw the upright line from which it is to project, mark the height of the Cornice, and divide it into three equal parts, which will give the large diviſions; then compare the greater with the leſſer parts. The uppermoſt diviſion contains the *Cima Recta* with its Fillet, which is $\frac{1}{4}$ of that part. The *Corona* has a Liſt of a ſixth part of the middle diviſion: The lowermoſt diviſion contains two members of equal bigneſs, *viz.* the *Cavetto* and the *Ovolo*; the *Cavetto* has a Liſt of $\frac{1}{4}$ of its height, and the Liſt over the *Ovolo*, which makes the Drip under the *Corona*, is of the ſame bigneſs. The projection of the Cornice, being equal to its height, is divided into three principal parts, and ſubdivided according to the projection of the members, as appears by the diviſions upon the Line under the Cornice.

The Capital of the TUSCAN and DORICK Orders.

PLATE VI.

THE *Tuſcan* Capital is half a Diameter in height; its projection is $\frac{1}{6}$ of the Diameter of the Column at the ſmalleſt part. Divide the height of the Capital into three parts; give one to the *Collarino* A, one to the *Ovolo* B, and the third to the *Abacus* C. The greater Diviſions are ſubdivided into leſſer according to their members. Divide the projection of the Capital into ſix parts, and make the *Ovolo* leſs than the Quadrant of a Circle. To find its Center mark the interſections from the extreme parts of the *Ovolo*, join them as marked by the prick'd line, and where this line interſects the upper line of the *Ovolo*, that will be the Center. The Aſtragal *D*, under the Capital, is a member belonging to the Column, and its meaſure is $\frac{1}{6}$ of the Semidiameter of it; and its height being divided into three equal parts, $\frac{1}{7}$ goes to the Liſtel. It projects as much as it is in height. The method for joining the Liſtel to the Column is this; divide the projecting part of the Liſtel into five parts, and take ſix ſuch parts for the Semidiameter of the *Cavetto*.

The Profile of the *Dorick* Capital being much the ſame with that of the *Tuſcan* (except that the diviſions are more both in its members and projection) the foregoing Rule will be ſufficient to explain it.

The DORICK Pedeſtal with part of the Column and its Baſe.

PLATE VII.

THE *Dorick* Baſe is in height a Semidiameter of its Column, and its projection is $\frac{1}{7}$ of the Semidiameter; and that gives the breadth of the Die of the Pedeſtal. The height of the Pedeſtal was mentioned before in Plate I. N°. 2. The projection of the Baſe and Cap is the ſame as in the *Tuſcan*, Plate III. For their particular members ſee Plate XXIV, and for the Baſe of the Column ſee Plate XXV. The Flutings are twenty-four as they are marked on the Column.

The Names of the members of the Baſe of the Column are as follow:

A, The upper *Torus*.
B, *Scotia* or *Cavetto*.
C, Under *Torus*.
D, Plinth.

The DORICK Entablature.

PLATE VIII.

THE height of the *Dorick* Entablature (which is two Diam[illegible] or a fourth part of the height of the Column) being divided into eight [illegible] go to the Architrave, three to the Frize, and three to the Cornice. [illegible] e projects a whole Diameter or four of thoſe parts, or one half of the heig[illegible] whole Entablature, as is marked above the Cornice; but to make the Cor[illegible] Frize better underſtood, I have drawn them larger on the next Plate. I[illegible] Architrave ſee Plate XXVI. and for the Capital, Plate VI.

The Names of the Members of the *Dorick* Entablature.

A, *Cima recta* with a Liſt over it.
B, Liſt.
C, *Corona*.
D, Mutile, with an Ogee over it.
E, *Ovolo* with its Fillet.
F, Capital of the Triglyph.
G, Triglyph.
H, Flutings of the Triglyph.
I, Profile of the Triglyph.
K, Metop.
L, An Ornament in the Metop.
M, *Tenia* or Bandage.
N, *Guttæ* or Drops.
O, *Faſcia* of the Architrave.
P, *Cimaſium*.
Q, *Abacus*.
R, *Ovolo* or Quarter-round.
S, *Cavetto*.
T, Frize of the Capital.
U, Aſtragal.
V, The ſmalleſt part of the Column.
W, The Platform of the Cornice.

The Cornice and Frize of the DORICK Order.

PLATE IX.

THE Frize and Cornice are here expreſſed at large; the firſt ſhewing its Triglyphs and Metops, and the Cornice its Mutils and Modillions. The prick'd line *A B* is the middle of the Column, and the line *C D* anſwers to the diminiſhed part of the Column. The Metops of the Frize muſt be ſquare, their breadth

breadth being equal to their height, and they are $\frac{1}{4}$ of a Diameter. The Triglyphs are half a Diameter. Divide half the Triglyph into ſix parts; one is half a Flute, and the Space betwixt the Flutes is $\frac{2}{6}$. The Profile or thickneſs of the Triglyph *G* is $\frac{1}{6}$; divide that thickneſs into three parts, two will be the depth of each Flute. The Drops or Bells muſt be ſix; their form is triangular.

The Cornice is in height $\frac{1}{4}$ of a Diameter, and is divided into three parts; and each of them is ſubdivided into three. Take off one of the ſubdivided parts at the bottom of the Cornice, for the flat member that crowns the Triglyphs; then give two for the *Ovolo*, two for the Modillion, two for the *Corona*, and two for the *Cimaſium*. The Fillets and ſmall Ogee are explained by the ſmaller diviſions.

The projection of the Cornice is one Diameter. There is at the bottom of the Frize a Scale divided into four parts, and each fourth divided into three, and each third into three more. Take off the projection of the *Ovolo* and *Cimaſium*, as is expreſſed by the upright prick'd lines; proceed to find the diviſions for the heads of the Modillions, which are all to be equal. In order to this divide the diſtance from middle to middle of two Triglyphs into four parts; two of them will be the Modillion with the Fillet and Ogee over it, and two will be the diſtance betwixt the Modillions, which is to be divided into five parts for the Pannel in the Sofite; take one on each ſide for its Border, there will remain three for the ſquare of the Pannel, as is expreſſed here in the Profile. The bigneſs and projection of the Modillion being known, form the Platform or Sofite of it in this manner, as at *F*. Draw the two Diagonal lines from the corners *a* and *b*, interſecting one another at right angles in the middle of the inner ſquare at *C*. The diſtance of the Diagonal lines falling on the joining part of the Modillion at *d*, *d*, will give the ſide of the inner ſquare, and the remainder will be the border *e*, *e*, *e*, on the three ſides. Divide the ſides of the ſquare into ſix parts, and draw parallel lines from each diviſion; then deſcribe the Circular drops, leaving a ſmall ſpace of $\frac{1}{6}$ betwixt them. A double ſquare of two muſt be left plain in the middle, and the ſpace betwixt the Drops muſt be ſunk to half a Diameter of one of the Drops.

The IONICK Pedeſtal with part of the Column and its Baſe.

PLATE X.

THE general diviſions of the *Ionick* Pedeſtal are the ſame as in the foregoing Orders. For the particular parts ſee Plate XXIV for the Baſe and Cap of the Pedeſtal, and Plate XXV for the Baſe of the Column.

A, The Liſt.
B, Upper *Torus*.
C, *Scotia*.
D, Lower *Torus*.
E, Plinth.
F, *Cima* of the Pedeſtal.
G, *Dado*, or Die.
H, Baſe.
I, Plinth of the Baſe.

The IONICK Entablature.

PLATE XI.

THE height of the *Ionick* Entablature, being $\frac{1}{5}$ of the height of the Column, is divided into ten parts; three of them go to the height of the Architrave,

three to the Frize, and four to the Cornice. The projection of the Cornice, being equal to its height, is likewiſe divided into four parts. For the particular members ſee the next Plate, where it is drawn larger, and Plate XXVI for the Architrave.

A, [illegible].
B, *Corona*.
C, Modillion.
D, *Ovolo*.
E, *Cavetto*.
F, Frize.
G, Liſt
H, Reverſed *Cima*.
I, Upper *Faſcia*.
K, Lower *Faſcia*.

The Ionick Modillion-Cornice.

Plate XII.

THERE are two *Ionick* Cornices, one with Modillions, and the other with Dentels; they have both the ſame general proportions, but differ in their particular members. The *Ionick* Modillion-Cornice is divided into four principal parts; and thoſe parts are ſubdivided for its ſmaller members. The projection of the Cornice is equal to its height; the members are confined by pricked lines coming from the Scale at the bottom of the Cornice, which is divided into four parts and ſubdivided. This Cornice, when uſed over Columns, muſt have its Modillions $\frac{1}{6}$ of the Diameter of the Column, and the ſpace betwixt them $\frac{1}{6}$. Half a Diameter betwixt middle and middle of the Modillions is here divided into ſix parts; of which one is half a Modillion, and four the ſpace betwixt them and the length of the Modillion three. The prick'd line *A B*, which is the middle of the Column, muſt go through the middle of the Modillion; and the line *C D* ſhews the diminiſhed part of the Column, which toucheth the ſide of a Modillion. The ſhape or form of it is made from three Centers: The length of it being firſt divided into ſix parts, erect a perpendicular at 4, and another at 1; the firſt Center will be at 4, the ſecond one and a half below it, and the third two and a half above it, according to the two Quadrants on the Modillion. The projection of a reverſed Ogee and Fillet over it, being the Cap of the Modillion, is ſhewn by a prick'd ſquare at the end of the Modillion. As to the ſquare Pannels in the Sofite of the Cornice, divide the ſpace betwixt the Caps of the Modillions into ſix parts, as is figured; take one on each ſide for the Border, there remain four for the Pannel. Mark the ſame diviſions on the Profile of the *Corona* at *E*, and divide the remaining part in two for the Drip. But where the Cornice is uſed without Columns, the bigneſs of the Modillion in proportion to the Cornice is given on the Scale below the Cornice.

The Ionick Dentel-Cornice.

Plate XIII.

THE height of the *Ionick* Dentel-Cornice is divided into four parts as the former, and is very eaſy in its diviſions. When this Cornice is uſed upon Pillars or Pilaſters, the Dentels muſt be exactly divided by the Diameter of the Column. Suppoſing the line *A B* to be the middle line of the Column, from hence is ſet down half a Diameter divided into twelve equal parts, as marked on

the

the Dentels, of which one is half a Dentel, and one the ſpace betwixt them: The upright line *C D* anſwers to the diminiſhed part of the Column, from whence the Cornice doth project, as directed by a Scale below the Cornice. But in caſe the Cornice is uſed by itſelf for Rooms, Doors, Windows, &c. to find the bigneſs of the Dentel, you muſt divide $\frac{1}{4}$ of the Scale of the projection of the Cornice into ſix parts: Then take the length of ſeven ſuch parts, and divide it into five parts; two of them will be the Dentel, and one the ſpace betwixt them, as you may obſerve by the Scale *C C*.

The IONICK Capital.

PLATE XIV.

THIS Plate contains three Figures; N°. 1. the upright face of the Capital, N°. 2. the Plan of the round and ſquare Column with the projection of the Capital, and N°. 3. the Volute ſeen in front and angular-wiſe, drawn larger than above. Between N°. 1. and N°. 2. there is a Scale of one Diameter, half of which is divided into ſix parts; to which there are added three parts on each ſide, for the projection of the Capital. Draw a line for the middle of the Capital, and another croſs-wiſe for the upper part of it; give half a Diameter for its height *A B*: Divide it into three parts, as marked on the left hand above; take $\frac{1}{7}$ for the *Abacus*, which you are to divide into two parts, and the upper half into four, of which you muſt give three to the *Ovolo*, and one to the Liſt of the *Abacus*. Then divide the height *B C* into eight parts, two of them give the *Ovolo* H, one the Bead *I*, which anſwers to the Eye of the Volute, and half one of thoſe parts gives the Liſt *K*. This being done, form the Volute from its ſeveral Centers, as in the example N°. 3. And as the height of the Volute is divided into eight parts, the breadth of it muſt be ſeven of them: But to make it more plain, I have drawn it larger on the next Plate.

To draw the Plan N°. 2. take five parts of the Diameter for the ſolid or diminiſhed part of the Column, which is ſhaded on the Plan. From the Profile of the upright face of the Capital draw the projection of the *Ovolo*, Bead and Liſt, and mark them in the Plan. The Flutings are 24; to form which, divide a quarter of the Plan of the Column into ſix parts, which ſhall give the Center for each Flute. Then divide half a ſixth into four parts; take three parts for half the Diameter of the Flutes, and draw them Semicircular, the ſpaces betwixt the Flutes will be $\frac{1}{7}$ of a Flute; the Eggs and Darts are of the ſame number, and anſwer the ſame Diviſions. The Flutes of Pilaſters or ſquare Columns muſt be the ſame as in round Columns, which will make ſeven in number, divided from the middle; at the corner of each Pilaſter there remains $\frac{1}{7}$ for a Bead. Then form a ſquare at the extremity of the projection of the Capital, take off at each corner diagonally $\frac{1}{6}$ of half the Diameter of the Column, from the corner of the remaining length mark the interſection at *D*, from this Center draw the Segment or Cavity of the *Abacus* E E, ſet off corner-wiſe $\frac{1}{6}$ for the two members of the *Abacus* F F, divide it into two parts and give one to the narroweſt part of the *Abacus* G G, join the inner and outer corner by a line, and return the members of the Cavity. The greateſt projection of the Volute *L* falls plumb with the lower part of the *Abacus* G, as is ſhewn in N°. 3.

A Rule for drawing the Spiral Lines of the Volute of the IONICK Capital.

PLATE XV.

THE Rule to draw the Spiral lines, which form the *Ionick* Volute, is this: Take the height *A B*, and divide it into eight parts, the fourth ſhall be the bigneſs of the Eye, which divide into two parts for the Center; then draw *A C* in a rectangle to *A B*, and mark on it ſeven of the diviſions of the upright line *A B*, which gives the breadth of the Volute; the upright line on the third diviſion gives the Center of the Eye: Then draw the outer ſquare that contains the Eye, and the Diagonal lines through the Center of it; parallel to thoſe Diagonals, deſcribe the inner ſquare, in which obſerve the croſs lines from ſide to ſide divided into ſix parts for the Centers, as is expreſſed larger in the lower Figure, where the Centers are marked 1, 2, 3. From theſe Centers draw lines parallel to the ſides of the outer ſquare, extended on each ſide; fix one point of your Compaſſes in the firſt Center 1, and extend the other upwards to 1, and draw the biggeſt Quadrant from 1 to 2; change your Compaſſes to the Center 2, and with the length 2, 2, deſcribe the next Quadrant from 2 to 3; and ſo on to the number of Centers, until the Spiral line touch the upper part of the Eye. The inner Spiral runs parallel to the outer from *a a* to Center 3, and the breadth of the Fillet formed by them is half one of the diviſions of the upright Scale. The ſecond Spiral is marked with letters *a b c d*, &c. as alſo the Centers belonging to it; all which will be plain if followed in the ſame manner as before.

The CORINTHIAN Pedeſtal with part of the Column.

PLATE XVI.

THE *Corinthian* Pedeſtal is the ſame, as to its general proportions and parts, as the Pedeſtal of the foreging Orders. For the Baſe and Cap of it ſee Plate XXIV, and for the Baſe of the Column, Plate XXV. The Flutings of the Column are twenty in number, and are of a Semicircular form.

The CORINTHIAN Entablature.

PLATE XVII.

THE height of the *Corinthian* Entablature is divided into ten parts; whereof the Architrave hath three, the Frize three, and the Cornice four. The projection of the Cornice, being equal to its height, is divided into four parts: The ſmaller diviſions are expreſſed at large on the next Plate. For the Architrave ſee Plate XXVI. The Drawings below ſhew the Platform of the Cornice with its Modillions and Roſes.

The CORINTHIAN Cornice at large.

PLATE XVIII.

THE *Corinthian* Cornice is of a more rich compoſition, and hath a greater variety of members than the former. The firſt upright Scale contains four parts of the ten into which the whole Entablature is divided, as on Plate XVII. The ſecond Scale is divided into five parts, the third of which goes to the Modillion, the fourth to the *Corona*, the fifth to the *Cimaſium*; the firſt and ſecond together are divided into three parts, the firſt is for the reverſed *Cima* at the bottom, the ſecond for the Dentels, and the third for the *Ovolo*. The ſmaller members are in proportion to the greater, as is explained by the leſſer diviſions on that Scale. The Modillions are $\frac{1}{6}$ of the Diameter of the Column, and their diſtances two ſixths and a half. Half a Diameter is here divided on the Cornice into ſix parts, of which the breadth of the Modillion is two, and the length of it is four; the Cap projects $\frac{1}{3}$ of thoſe parts, and the diſtance betwixt the Modillions is five. By this Rule the exact diſtance betwixt middle and middle of the Modillions is $\frac{7}{11}$ of the Diameter. The upright prick'd line *A B* is the middle of the Column, and *C D* anſwers to the diminiſhed part of it, from whence the Cornice is projected; which projection is equal to its height, as is ſhewn by the Scale at the bottom of the Cornice; on which is likewiſe ſhewn the bigneſs of a Modillion, where one fourth of the Scale is divided into ſix parts, five of which make the breadth of the Modillion. The diſtance between them is in proportion to it, as figured in the Front and Profile of it. The Pannels in the Sofite are plain by the diviſions marked on them. The Out-fillets of the Modillion marked *a*, *a*, are $\frac{1}{8}$ of its breadth; and ſo is the Bead *f*. But I have drawn the Modillion at large and explained it at the end of this Book, Plate LXIV. As to the Dentels, divide the Semidiameter marked on the Cornice into fourteen parts: two of thoſe parts will be the Dentel, and one the ſpace betwixt them.

The CORINTHIAN Capital.

PLATE XIX.

THERE are three Figures on this Plate. N°. 1. is the upright of the Capital. N°. 2. the Plan, being one quarter-part of a round and ſquare Column; as alſo of the Capital with its Projections. N°. 3. the Capital ſeen angular-wiſe and in profile, with its Stems and *Cauliculi*. The height of the Capital is one Diameter and $\frac{1}{6}$, including the *Abacus*. Divide the height of the Capital from the Aſtragal to the under-part of the *Abacus* into three parts, which give the height of the Leaves and *Cauliculi*; and each part being ſubdivided, as on the Scale upon the left hand of the Capital, will give the Foldings of the Leaves, which muſt not exceed in projection the oblique prick'd line drawn from the Aſtragal to the extremity of the *Abacus*.

The COMPOSITE Pedeſtal with part of the Column.

PLATE XX.

THE general proportions of the *Compoſite* Pedeſtal are the ſame as in the foregoing Orders. For the particular parts, ſee Plate XXIV for the Baſe and *Cima* of the Pedeſtal, and Plate XXV for the Baſe of the Column.

The COMPOSITE Entablature.

PLATE XXI.

THE height and projection of the *Compoſite* Entablature is the ſame with that of the *Corinthian*; only the Aſtragal under Ogee at the bottom of the Cornice is taken off the Frize. The Cornice is drawn by itſelf on the next Plate. For the Architrave ſee Plate XXVI.

The COMPOSITE Cornice at large.

PLATE XXII.

THE height of the *Compoſite* Cornice is divided into four parts; as alſo its projection. This Cornice is in itſelf plain and eaſy, being taken from the *Ionick* Modillion-Cornice; from which this differs only in the form of the Modillion. The upright line *A B* is the middle of the Column, and *C D* is the diminiſhed part of it, from whence the Cornice doth project, equal to its height. If $\frac{1}{4}$ of the Scale below be divided into ſix parts, five give the bigneſs of the Modillion. The Aſtragal under the Ogee at the bottom is not a part of the Cornice, but belongs to the height of the Frize.

The COMPOSITE Capital.

PLATE XXIII.

THE three Figures here exhibit (N°. 1.) the Upright of the Capital. (N°. 2.) The Plan of the round and ſquare Column, and the Capital with its Projections. (N°. 3.) The Capital ſeen on its angle and in profile. The Volute is the ſame as in the *Ionick*. The height of the Capital, including the *Abacus*, is one Diameter and $\frac{1}{6}$, as that of the *Corinthian* is; and ſo are the height of the Leaves and their Foldings.

The Baſes and Caps of the Pedeſtals of each Order.

PLATE XXIV.

THE projection of the Baſe of the Pedeſtal being equal to its height, draw the Baſe-line and erect a perpendicular for the Out-line of the Pedeſtal, as it is drawn on this Plate for the *Tuſcan* Baſe and Cap; mark its height and projection, draw the Diagonal of the ſquare, divide the height into two parts, and one of them into three, take off the ſquare of one for the Liſts at the top and bottom,

bottom, divide the Diagonal betwixt Liſt and Liſt into two parts, and mark the Interſections from the middle and extreams of the Diagonal, as in the Plate; thoſe Interſections are the Centers for drawing the Out-line of the Ogee. This is the Rule for all Curvilinear members of this kind, whether erect or reverſed, as will appear in other examples. The Caps or Cornices of Pedeſtals are very eaſy in their diviſions; and their projection is to their height as two to three, as appears by the upright Scales for their height and diviſion of their members, and the Scales between the Caps and Baſes for their projections.

Baſes of the Columns of each Order.

PLATE XXV.

THE Baſes are in height a Semidiameter of their Columns; their projection is $\frac{1}{3}$ of their height: Their members are of an eaſy form, being moſt of them Semicircular, except the *Scotia* which is mixti-linear, drawn from two Centers in this manner, as in the figure of the *Ionick* Baſe: Having divided and drawn the bigneſs of each member and the Centers of the upper and under *Torus*, let fall a perpendicular from the Center of the upper *Torus*, and divide it within the ſpace of the *Scotia* into ſeven parts; the three uppermoſt will be the Semidiameter of the leſſer Circle *CDE*: From the Center *C*, draw the outer Semicircle *AFB*, then draw the oblique line *AE* through the Center of the leſſer Circle, *A* ſhall be the Center of the Segment *BE*; ſo that *BED* is the *Scotia* required. This Rule will ſerve for all the Baſes of Columns. The upright and horizontal Scales ſhew the diviſions of the members and their projections.

The Architraves of each Order.

PLATE XXVI.

IT is to be obſerved that the height of the Architraves of the *Tuſcan* and *Dorick* Orders is divided into two parts, and then ſubdivided, as appears on this Plate; and that of the *Ionick*, *Corinthian* and *Compoſite*, is divided into three parts, and thoſe ſubdivided, to form their members. The projection is taken from the line *AB*, which falls perpendicular to the lower *Faſcia*, and is in the firſt and ſecond Order $\frac{1}{6}$, and in the three other Orders $\frac{1}{4}$ part of their height.

The Impoſts of each Order.

PLATE XXVII.

THE letter *A* is the Impoſt, and *B* the Plan of the Pilaſter contained in the ſquare *a b c d*; *a b*, marked on the Plan and in the Upright over the Impoſt, is the Architrave that goes round the Arch; *b c* is the inſide of the Pilaſter. The Impoſts of Arches are in height $\frac{1}{8}$ of their Opening; which being divided into three parts, one of them is the height of the Neck or Frize of the Impoſt, the reſt goes to the Cap. The Aſtragal at the foot of the Impoſt is $\frac{1}{6}$ of its height, and is divided into three parts, one goes to the Liſt, and the other two to the Aſtragal. As to the projection of the Impoſt, in the *Tuſcan* and *Dorick*, divide the Archi-

trave that goes round the Arch into three parts, one of them is the projection of the Impoſt: But in the *Ionick*, *Corinthian* and *Compoſite*, the Impoſts project $\frac{1}{3}$ and $\frac{1}{4}$ more of one of theſe parts. The Profiles of the Architraves of the Arches of each Order are drawn under each Impoſt. For the diviſions of the parts obſerve the upright and horizontal Scales.

Of Exotick Pedeſtals, and the Rule for drawing the Eggs and Darts.

PLATE XXVIII.

BY Exotick Pedeſtals I mean ſuch as have their Mouldings otherwiſe formed and adorned than the Regular Pedeſtals that belong to each Order. And they are uſed generally for ſupporting Figures or Vaſes in Gardens, &c. Not but that thoſe Ornaments may be ſupported by Regular Pedeſtals; but not being confined to ſuch, they are made generally different from them. I have given here two ſorts of them with their meaſures; and if the diviſions on the Scales be obſerved, they will not be found difficult.

As to the Ornament of Eggs and Darts cut in the *Ovolo*, much uſed by the Ancients, if they are well proportioned they have a good effect. The Rule for drawing them is this: Divide the height of the *Ovolo* or Quarter-round into nine parts, ſeven of them, marked on each ſide of the middle line of the Egg, give the middle of the Darts; the ſmall croſſes on the right hand ſhew the Centers of the circular lines, and the prick'd lines coming from the Centers ſhew the joining of thoſe lines that form the Egg and Shell. The Dart itſelf is formed by the prick'd lines which interſect each other; the one coming from the top of the middle line of the Egg, and the other from the upper part of the other Dart. I have given here ſeveral ſorts of Eggs without Darts for a variety.

The Intercolumnations of each Order.

PLATE XXIX.

THE placing of Columns at convenient diſtances aſunder is called Intercolumnations, and are uſed in Galleries or Corridores, either for Beauty or Uſe, or both, or for Communication from one place to another, for Porticoes, *Periſtyliums* or Colonnades, &c. The Columns may be more or leſs diſtant from each other according to the different Orders; but will be moſt agreeable when they are in proportion to their height. I have given on this Plate three different examples of each Order, and their diſtances figured. The narroweſt is for double Columns, or Columns placed two and two.

Of Arches adorned with Columns or Pilaſters.

WHEN Arches are adorned with Columns or Pilaſters, either with or without Pedeſtals, let the Columns or Pilaſters be ſo diſpoſed, as to leave a convenient ſpace for the Arch and its Architrave, and let the Peers be no more than one half, nor leſs than $\frac{1}{3}$ of the Void. The Architrave round the Arch ſhould be always $\frac{1}{6}$ of the Void of the Arch, and the Impoſt the ſame, whether the Arch be great or ſmall. The Impoſt reſembles the form of a Capital becauſe of its bearing.

ing. The Arches of each Order will not admit of any conſiderable variety, being confined to the diviſions of Triglyphs and Modillions.

The TUSCAN Arch with and without its Pedeſtal.

PLATE XXX.

TO form the *Tuſcan* Arch without the Pedeſtal, firſt find out the Diameter of the Column, and divide the height into five parts; the fifth part is the height of the Entablature: Then divide the height of the Column into ſeven parts; one of them is the Diameter of the Column. Give one Diameter for the height of the Plinth. The diſtance from middle to middle of the Columns muſt be ſix Diameters. The Pilaſters on each ſide of the Column are a Semidiameter of it in bigneſs, and the width of the Arch is four Diameters. To find the Center of the Arch, divide the height from the Ground-line to the under-part of the Entablature into three equal parts, as is expreſſed by a line on the right hand; the extremity of the ſecond diviſion is the Center of the Arch.

N. B. Let this be a general Rule not only for the *Tuſcan* Arch with or without the Pedeſtal, but for all other Arches of the five Orders. When the Diameter and diſtance from middle to middle of the Columns, on each ſide the intended Arch, is found the diſtance from Column to Column being divided into ten parts, one of them ſhall be the bigneſs of the Pilaſter, and the other eight give the Opening of the Arch.

The Architrave that goes round the Arch, as alſo the Impoſt, are each of them as big as the Pilaſter, or $\frac{1}{8}$ of the Opening of the Arch; ſo that if the diſtance from Column to Column be thus mechanically divided, as is marked on the Arches of each Order on the left hand, it will anſwer as if it were divided arithmetically. Although I have figured them arithmetically on the Plates, thoſe figures are not to be taken notice of further than for the diſtances from Center to Center of the Columns; ſince the mechanical diviſions mentioned before will do the ſame thing.

As to the *Tuſcan* Arch with its Pedeſtal, divide its height into five parts, one of them is the height of the Pedeſtal: Then divide the height above the Pedeſtal into five parts, one of them is the height of the Entablature. The height from the Pedeſtal to the Entablature being divided into ſeven parts, one of them is the Diameter of the Column. The diſtance from middle to middle of the Columns muſt be ſeven Diameters, the Pilaſters that ſupport the Arch are $\frac{2}{7}$ of the Diameter, and the Opening of the Arch will be four Diameters and $\frac{2}{7}$. The Center of the Arch is marked upon the upright line on the right hand.

The DORICK Arch with and without the Pedeſtal.

PLATE XXXI.

TO draw the *Dorick* Arch without the Pedeſtal, find the Diameter of the Column, and take the Semidiameter for the Plinth. The diſtance from middle to middle of the Columns muſt be ſix Diameters and $\frac{1}{4}$, the Pilaſters that ſupport the Arch muſt be half a Diameter, and the Opening of the Arch four Diameters and $\frac{1}{4}$. Theſe dimenſions cannot be varied, becauſe of the diviſions of

the Metops and Triglyphs. The Center of the Arch is found by the upright line on the right hand.

As to the *Dorick* Arch with the Pedeſtal, firſt find the Diameter of the Column; the diſtance from middle to middle of the Columns muſt be ſeven Diameters and a half, the Pilaſters of the Arch will be $\frac{5}{8}$ of the Diameter, and the Opening of the Arch five Diameters and $\frac{1}{4}$.

The Ionick Arches.

Plate XXXII.

THE diſtance from middle to middle of the Columns of the *Ionick* Arch without the Pedeſtal, ſo as to have the Modillions fall right, muſt be ſix Diameters; the Pilaſters that ſupport the Arch muſt be half a Diameter, and the Opening of the Arch four Diameters, &c.

The *Ionick* Arch with the Pedeſtal, from middle to middle of the Columns, muſt be ſeven Diameters and a half, the Pilaſters $\frac{5}{8}$ of a Diameter, and the Opening of the Arch five Diameters and $\frac{1}{4}$. The Rule for finding the Center of the Arch is marked on the Column.

The Corinthian Arch.

Plate XXXIII.

THE diſtance from middle to middle of the Columns of the *Corinthian* Arch, without the Pedeſtal, muſt be ſix Diameters and $\frac{5}{12}$, the Pilaſters that ſupport the Arch are $\frac{11}{24}$ of a Diameter, and the opening of the Arch four Diameters and $\frac{1}{3}$. The Rule to find the Center of the Arch is this: Divide the height, from the upper part of the Step to the under-part of the Entablature, into ten parts; the diviſion from 6 to 7 being divided into four, the third is the Center, as appears by the line on the right hand.

The diſtance from middle to middle of the Columns of the *Corinthian* Arch, with the Pedeſtal, muſt be eight Diameters and $\frac{5}{12}$; the Pilaſters that ſupport the Arch $\frac{47}{60}$, and the opening of the Arch five Diameters and $\frac{1}{3}$. To find the Center of the Arch, divide the diſtance from the upper part of the Pedeſtal to the under part of the Entablature into ten parts; the ſixth diviſion will be the Center of the Arch.

The Composite Arch.

Plate XXXIV.

THE diſtance from middle to middle of the Columns of the *Compoſite* Arch, without the Pedeſtal, is ſix Diameters and a half, the Pilaſters $\frac{29}{60}$, the Opening of the Arch four and $\frac{1}{8}$. The Center of the Arch is marked on the right hand.

The diſtance from middle to middle of the Columns of this Arch, with the Pedeſtal, is eight Diameters. The Center of the Arch is found by dividing the diſtance from the upper part of the Pedeſtal to the under part of the Entablature into ten parts; the Center is at the ſixth diviſion.

Of placing Columns over Columns.

IN deſigning of Colonnades, or Arcades, adorned with Columns of two or three Orders placed over one another, it is to be obſerved, that the firſt or lowermoſt Order, as the *Dorick* in the following Plate, muſt give the bigneſs of the Diameter to the Order immediately over it, being there the *Ionick*; which being $\frac{5}{6}$ of the Diameter of the *Dorick*, the Diameter of the *Ionick* will be equal to the diminiſhed part of the *Dorick*, which diminiſhes $\frac{1}{6}$ of its Diameter. In ſmall Draughts divide ſix Diameters of the *Dorick* into ſeven parts, $\frac{1}{7}$ will be the Diameter required for the *Ionick*. The ſame method is to be taken for finding the Diameter of the *Corinthian* over the *Ionick*. In this and all other compoſitions the Intercolumnation is directed by the Diameter; as alſo by the diviſions of the Metops and Triglyphs, and Modillions. Their proportions in reſpect to the Diameter are as followeth:

The *Dorick* from middle to middle of the Triglyphs is one Diameter and $\frac{1}{4}$, the Triglyph $\frac{1}{5}$, and the Metops $\frac{1}{5}$ of a Diameter.

The *Ionick* from middle to middle of the Modillions is $\frac{1}{2}$ the Diameter, the Modillion $\frac{1}{6}$, and the Interval $\frac{1}{3}$ of it.

The *Corinthian* from middle to middle of the Modillions is $\frac{7}{12}$ of the Diameter, the Modillion $\frac{1}{6}$, and the Interval $\frac{5}{12}$.

The *Compoſite* from middle to middle of the Modillions is $\frac{1}{2}$ of the Diameter, the Modillion $\frac{1}{6}$, and the Interval $\frac{1}{3}$.

N. B. $\frac{7}{12}$ is twelve times in ſeven Diameters.

The IONICK and CORINTHIAN Orders over the DORICK.

PLATE XXXV.

HERE are two examples of Orders over Orders; that on the left hand is the *Dorick* with the *Ionick* over it, and the *Corinthian* over the *Ionick*. The *Dorick*, being the lowermoſt Order, gives the rule to the other two, becauſe of its Metops and Triglyphs; the diſtance of each Intercolumnation is figured.

The other example, on the right hand, is the *Corinthian* over the *Ionick*, on a Ruſtick Baſement. The firſt example ſhews the Intercolumnations where the Columns are inſular, this ſhews the Intercolumnations when they are three quarter Columns. The diſtances betwixt middle and middle of the Columns are figured.

It was obſerved before, that the Pedeſtal ſhould not be leſs than $\frac{1}{3}$ of the height of the Column and Entablature together; but here is a neceſſity to have it leſs, otherwiſe the Breaſts of the Windows would be too high, if the Columns be of a large Diameter.

Arches over Arches.

PLATE XXXVI.

THERE muſt always be regard had to the lower Order, as was ſaid before, becauſe it regulates the Orders over it, ſo that the Modillions may fall regularly over each other. The diſtances from middle to middle of the Columns being figured, the Rules given before will be ſufficient for explaining theſe two examples.

Of Doors and Gates.

DOORS and Gates have their Heads either ſquare or circular; the latter ought not to be uſed, unleſs the Impoſt be above a Man's height. The proportion of their Openings is as one to two, or their height is twice their breadth; but the higheſt of them ſhould not exceed two ſquares and $\frac{1}{6}$. To be more particular with reſpect to Doors, I will begin with the *Tuſcan*.

The TUSCAN Door.

PLATE XXXVII. N°. 1.

FIRST find the Diameter of the Column, give ſix Diameters from middle to middle of the Columns, the Opening of the Door will be four Diameters, the Frame round the Door will be a Semidiameter, the height of the Opening will be ſeven Diameters, and the Plinth one Diameter.

The DORICK Door.

PLATE XXXVII. N°. 2.

HAving found the Diameter of the Column, give ſix Diameters and $\frac{1}{4}$ to the diſtance from middle to middle of the Columns; four Diameters and $\frac{1}{4}$ is the Opening, and eight Diameters and a half go to the height, &c.

The IONICK Door.

PLATE XXXVII. N°. 3.

THE diſtance from middle to middle of the Columns is ſix Diameters and a half, the Opening four Diameters and a half, and the height of the Opening nine Diameters and a half, &c.

The Geometrical Rule to find the height of the Pediment is this: Draw the line *B G* through the middle of the intended Door (as in N° 2.) take the full extent of the Cornice *A C*, from the middle of it at *E* deſcribe the Circle *A B C D*, and from *D* deſcribe the Circle *A F C G*, the Segment *A F C* is the proper height of the Pediment.

The COMPOSITE Door.

PLATE XXXVIII. N° 1.

THE diſtance from middle to middle of the Columns, ſo that the Modillions may anſwer right, muſt be ſeven Diameters, the Opening four Diameters and $\frac{1}{4}$, and the height of the Opening ten Diameters and $\frac{3}{8}$, &c.

The CORINTHIAN Door.

PLATE XXXVIII. N°. 2.

THIS Door hath ſeven Diameters betwixt middle and middle of the Columns, the Opening is four Diameters and $\frac{3}{4}$, and the height ten Diameters and $\frac{3}{8}$, &c.

Another Door of the CORINTHIAN Order.

PLATE XXXVIII. N° 3.

THE diſtance from middle to middle of the Columns is ſeven Diameters and $\frac{7}{12}$, the Opening four Diameters and $\frac{3}{4}$, and the height ten Diameters and $\frac{3}{8}$, &c.

The TUSCAN Arched Door with a Pediment and Balluſtrade.

PLATE XXXIX. N° 1.

THE diſtance from middle to middle of the Columns muſt be ſix Diameters, and the Opening four. The Rule for finding the Center of the Arch appears upon a line on the right hand, &c.

The DORICK Arched Door.

PLATE XXXIX. N° 2.

THE diſtance from middle to middle of the Columns is ſix Diameters and $\frac{1}{4}$, and the Opening of the Arch is four Diameters and $\frac{1}{4}$, &c.

The IONICK Arched Door.

PLATE XXXIX. N° 3.

THE *Ionick* Arched Door has ſeven Diameters from middle to middle of the Columns, and the Opening of the Arch is four Diameters and a half. The prick'd line on the right hand (which is the height from the Ground-line to the under-part of the Entablature) being divided into three equal parts, the ſecond diviſion gives the Center of the Arch, &c.

The COMPOSITE Arched Door.

PLATE XL. N° 1.

FROM middle to middle of the Columns there are ſeven Diameters and a half, the Opening of the Arch is five Diameters. The line on the right hand gives the Center of the Arch, and that on the left gives the general diviſions, &c.

The CORINTHIAN Arched Door with double Columns.

PLATE XL. N° 2.

THE diſtance from middle to middle of the Columns on each ſide of the Arch is ſeven Diameters, and from middle to middle of the double Columns one Diameter and $\frac{1}{4}$, and the Opening of the Arch four Diameters and $\frac{3}{7}$, &c.

The CORINTHIAN Arched Door with ſingle Columns.

PLATE XL. N° 3.

THE diſtance from middle to middle of the Columns is ſeven Diameters and $\frac{7}{7}$, the Opening of the Arch is five Diameters, &c.

N. B. I have given great variety of Doors in my Book of DESIGNS and ORNAMENTS, publiſhed in 1728.

Two Gates; one DORICK, the other IONICK.

PLATE XLI.

IN the *Dorick* Gate, in order to have the Metops and Triglyphs juſtly divided, the diſtance from middle to middle of the Columns next the Arch muſt be ſeven Diameters and a half, and from middle to middle of the leſſer Intercolumnation three Diameters and $\frac{1}{4}$, and the Opening of the Arch five Diameters. The Attick is $\frac{1}{5}$ of the whole height of the Order, including the Pedeſtal, as appears by a line on the left hand; the Center of the Arch, or the height of the Impoſt from the Ground-line, is marked on the right hand.

The *Ionick* Gate hath eight Diameters betwixt middle and middle of the Columns on each ſide of the Opening, which is ſix Diameters and a half; the diſtance from middle to middle of the Columns of the leſſer Intercolumnation is three Diameters and a half, the Attick is $\frac{1}{5}$ of the height of the Order.

Three Doors with Architraves.

PLATE XLII.

I Have given on this Plate, three different ſorts of Doors with Architraves. The firſt has its Opening two ſquares, and the Architrave is $\frac{1}{6}$ part of the Opening. The Architrave, Frize and Cornice are in height one half of the breadth of the Opening; and that being divided into three parts, one goes to the Architrave; the other two being divided into ſeven, three go to the Frize, and four to the Cornice. For the particular diviſions ſee Plate XLVI.

The ſecond Door is two ſquares and $\frac{1}{6}$, having Architrave, Frize, and Cornice, with Scrolls and Pilaſters. The Architrave is $\frac{1}{6}$ of the breadth of the Opening, and two thirds of the breadth of the Architrave give the bigneſs of the Pilaſter, upon which the Scroll is fixed. The Entablature, as to its principal parts is divided as in the former example. For the particular parts ſee Plate XLVI.

The

The third Door is two ſquares, and hath the ſame proportions with the firſt; but it hath a circular Pediment and ſwell'd Frize, and the Architrave is knee'd $\frac{1}{4}$ part of the Opening. For the Particulars ſee Plate XLVI.

Ruſtick Doors.

PLATE XLIII.

I Have given on this Plate five different ſorts of Ruſtick Doors, although they appear but three: They are all two ſquares in height, or their height is twice their breadth. The method of drawing them is ſo eaſy, the parts being figured, that it's needleſs to give any further deſcription of them.

Windows and Niches.

PLATE XLIV.

HERE are three different kinds of Windows and Niches, all with Architraves, Frizes and Cornices. The Breaſt, or Pedeſtal-part, of the Window is $\frac{1}{3}$ of the whole height, as is ſhewn by a line on the left hand; the height of their Openings is two ſquares. There are Niches inſcribed within them. The Architraves, Frizes and Cornices have the ſame proportions as in the Doors. For a greater Variety of Windows and Niches, ſee my Book of DESIGNS and ORNAMENTS before mentioned.

The Proportions of Windows for different heights of Rooms.

PLATE XLV.

ON this Plate is ſhewn the different proportions of Windows for different heights of Rooms. There are two of two Squares, one of a Square and $\frac{1}{4}$, one of a Square and a half, one of a Square and $\frac{1}{4}$, and one ſquare Window. The Architraves in all of them are $\frac{1}{6}$ of their Openings.

Cornices for Doors, Windows and Niches.

PLATE XLVI.

HERE are three different ſorts of Cornices for Doors, Windows and Niches. The outer line on the left hand divides the whole height into three parts, one of which goes to the Architrave; the two upper parts being divided into ſeven, as appears upon the ſecond line, three of them go to the Frize, and four to the Cornice, which is ſubdivided into its members by the third line. The projection of the Cornice of the firſt is divided into three parts and ſubdivided; the projection of the ſecond is divided into five parts and ſubdivided, and that of the third into four and ſubdivided for the projections of the members. The Architraves are divided into four parts and ſubdivided, and they project $\frac{1}{4}$ of their height.

A Rule for drawing the Scroll for the Support of Cornices over Doors, Windows and Niches.

PLATE XLVII.

THE Architrave, Frize and Cornice is in height half the breadth of the Opening, and the Architrave $\frac{1}{6}$, as in the former examples. The Frize and Cornice being divided into ſeven parts, four go to the Cornice and three to the Frize, which gives the bigneſs of the upper Spiral of the Scroll; the longeſt part of the Scroll *F G* takes four parts, and the lower Spiral two parts. The projection of each Spiral is to its height as 8 to 7. The thickneſs of the Scroll is always the ſame with that of the Pilaſter it is fixed upon, which is $\frac{1}{7}$ of the Architrave.

The Spiral is formed in the ſame manner as the *Ionick* Volute, with this difference, that the *Ionick* Volute has twelve Centers, this has but eight. The Eye of the Volute is drawn by itſelf larger below, with its diviſions, where the Centers are marked. Begin the Spiral with the firſt Center from 1 to 2, proceed from 2 to 3, &c.

The Centers of the Segments are found in this manner; the firſt is on the ſame line with the firſt Center of the upper Spiral, continued to the adjoining Pilaſter at *D*. The lower is ſix parts of the ſmaller Spiral diſtant from the extremity of the leſſer Spiral, expreſſed by the Quadrant in prick'd lines *A B C*; and the line *C D*, drawn from Center to Center, joins both Segments in their proper lengths. The Foldings in front, or the thickneſs of the Scroll from *E* to *E*, being divided into ſeven parts, one goes to each of the outer Fillets, and one to the middle Bead *H* with its Liſts, and each Liſt is $\frac{1}{7}$. The Center of the Bead is lower than the outer Fillets by $\frac{1}{7}$.

Venetian Windows.

PLATE XLVIII.

THEY are called *Venetian* Windows, becauſe they are moſt uſed in and about that City. They are proper to be placed at the end of Churches or Galleries. I have here given two of them, one *Dorick* and the other *Ionick*. The diſtance from middle to middle of the Pilaſters of the middle Opening of the *Dorick* is ſeven Diameters, and from middle to middle of the Pilaſters of the leſſer Openings, three Diameters and $\frac{1}{4}$.

In the *Ionick*, the diſtance from middle to middle of the Pilaſters of the larger Opening is ſeven Diameters, and in the leſſer Openings four Diameters, &c.

Six different Chimney-pieces.

PLATE XLIX.

CHimney-pieces are larger or ſmaller, according to the bigneſs of Rooms for which they are deſigned. I have in this Plate given [illegible] ſo marked that the proportion of their breadth to their height may be readily ſeen. The three uppermoſt are ſquare, and their Architraves are $\frac{1}{6}$ of their Openings; in thoſe below, being larger, the Openings vary, which the diviſions plainly

ſhew. The upright Scales ſhew the proportions of their height, and of their Architraves, Frizes and Cornices.

Three other Chimney-pieces with Frames for Pictures or Pannels over them.

PLATE L.

THESE three Chimney-pieces have Frames over them adorned with Pediments; they have the ſame proportions as to their Openings, as thoſe in the former Plate, but theſe are more ornamental. As to the proportion of their parts, obſerve the Scale to each of them.

Three more Chimney-pieces.

PLATE LI.

THESE have broken Pediments over them. There may be drawn a great variety of them, and all good in their kind, if the Draughtſman has a good taſte. Their Scales, as in the former, ſhew the proportion of their parts. I have given ſeveral more Deſigns of Chimneys in my Book of DESIGNS and ORNAMENTS.

Three different ſorts of large Mouldings for Pannel or Picture frames fixed in Rooms.

PLATE LII.

YOU have in this Plate three different ſorts of Mouldings for Pannel or Picture frames to be fixed in Rooms, with the manner of their Carving. Their Profiles are on the left hand, divided and figured; ſo that if the diviſions are carefully obſerved they will be found very eaſy. With a little alteration they may ſerve for Surbaſes to Rooms.

Five different Mouldings for ſmaller Pannels.

PLATE LIII.

THESE five ſorts of Mouldings are for ſmallér Pannels, to be placed over Doors, or between larger Pannels to bring them to a juſt proportion when they are too broad. The diviſions of their Profiles on the left hand ſhew how to form them.

The proportions of Rooms, and the Coving of their Cielings.

PLATE LIV.

I Have given on this Plate the different proportions of Rooms, as to their length, breadth and height; as alſo the proportion of their Coves and Arched Cielings. The firſt is a Cube of 20 feet, its Cove is $\frac{1}{4}$ of its height. The ſecond is 20 feet by 25, or a Square and $\frac{1}{4}$, its height is 22 $\frac{1}{2}$, and its Cove is $\frac{1}{4}$ of its height. The third is 20 by 30 feet, or a Square and a half, and has 25 feet for its height, and

and its Cove is $\frac{1}{4}$ of its height. The fourth is twenty feet by thirty five, or a Square and $\frac{1}{4}$; and is 27 feet high, and its Arch is $\frac{1}{5}$ of its height. The fifth is 20 by 40 feet, or two Squares or the double Square; its height is 30 feet, and its Arch is $\frac{1}{5}$ of its height: So that the Rule for finding the height of Rooms of theſe ſorts is this; let the length and breadth of them be added together, half the Sum is the height of the Room. The laſt is a Gallery 100 feet long and 20 feet broad, the length being five times its breadth: But let the Gallery be longer or ſhorter as it will fall out, its height muſt anſwer to the double Square. Theſe are the juſt proportions of Rooms as handed down to us by the greateſt Maſters, if their Cielings are Coved or Arched; but if they are flat, their height will be agreeable if made equal to their breadth; as for example, a Room 30 feet long and 20 broad ſhould be 20 feet high; and even Rooms of theſe proportions are often Coved, and that ſometimes $\frac{1}{4}$ and $\frac{1}{5}$. But in the common Buildings in *England*, we are forced to give Rooms a lower proportion in regard to the coldneſs of the Climate and the expence of building; ſo that the height is ſometimes $\frac{1}{5}$ leſs than the breadth, as 20 feet broad by 16 feet high, and ſometimes $\frac{1}{4}$ leſs, as 20 feet broad by 15 feet high, which is the loweſt proportion they ſhould have.

Of Cielings in general and their Ornaments.

PLATE LV.

THERE are different ways of adorning Cielings. I have given here three different ways; one with large ſquare Pannels, another with large Octagon Pannels and Squares, and the third with large Hexagons and Rhombs; all with Roſes in the middle of their Pannels, and bordered with Frets and *Guilochi's*. The proportions of each are figured on their Profiles on the left hand. Theſe may ſerve either for Curvilinear or Flat Cielings. By Curvilinear, I mean either Semicircular or Elliptical. I have made the Cieling of the Church of St. *Mary le Strand* with Squares and Rhombs, and the Elliptical Cieling of St. *Martin's* in the Fields with large Squares, the Angles taken off, with Roſes in them; both which Cielings have a very good effect.

Of Coved Cielings and their Ornaments.

PLATE LVI.

I Have given on this Plate ſix different ways of adorning Coved Cielings; the two uppermoſt are with Grinds. Each Cieling hath its Platform under it. The Coves of Rooms are generally made to be a Quadrant of a Circle, adorned either with Fretwork or Painting, and ſometimes with both.

Of

Of *Cupola's* and Circular Sofites.

PLATE LVII.

FIG. 1. *A B* is the breadth of one ſide of an Octagonal *Cupola*, from the middle of which erect the perpendicular line *D C*, draw the lines *C A*, *C B*; the Triangle *A B C* makes the Platform of an eighth part of the *Cupola*.

Fig. 2. The Profile is to be made by a Quadrant of a Circle *A B C*, directly over the Plan or Platform; divide half the line *A B* into ſeven parts, as here figured; ſix of them will make two Pannels, and the ſeventh will remain for the Border. The ſame diviſions muſt be marked on the Profile over the Baſe-line *A B*, in this manner; take for the Border at the bottom four parts, marked in the Plan, and place them on the Profile from the Baſe line to N° 1, from which draw a line parallel to the Baſe-line of the Plan, and meaſure the length of two Central lines marked 2, 2, in the Plan, and place it in the Profile for the ſecond Pannel; from thence draw another parallel line, and meaſure the length of the two Central lines at 3, 3, in the Plan to find the ſquare height of the third Pannel, and ſo on to the number of eight, as it appears in the Plan and Profile.

Fig. 3. The upright ſide of this Octagonal *Cupola* is made by the foregoing Geometrical Rule. Firſt draw the Baſe-line *A B*, even with the Baſe-line of the Profile *A B*, on which erect the Perpendicular *D C*, for the middle of the ſide; then draw all the parallel lines from the Profile, as expreſſed by *G G*, &c. take half the length of each line, figured in the Plan, and mark it on each ſide of the middle line of *Fig.* 3. until the length of every Pannel is fixed; which afterwards muſt be followed with a line drawn by hand to compleat the form or out-line of the Pannels. In the ſame manner are the inner diviſions brought over to the number of Pannels contained therein, as may appear by *Fig.* 3. The ſame Rule is to be obſerved in the other two ſides *H* and *I*, adorned with Octagons and Hexagons.

As to the Sofites of Arches, if they are divided into Pannels, they muſt be of an uneven number, as in *K*, *L*, *M*, by having a Pannel in the middle. The Border muſt be no more than one ſixth, nor leſs than one ſeventh part of the whole breadth.

The Quadrant or Profile *E F* (*Fig.* 2.) on which the Pannels of this Semicircular Sofite are divided, will be ſufficient to explain them. I have drawn two Semicircular Sofites, *N* and *O*, of a larger breadth, to ſhew how they may be adorned.

Of Flat Cielings adorned with Fret-work.

PLATE LVIII.

FLAT Cielings may be divided into Pannels, and adorned with Fret-work and Painting. But it is to be obſerved that the lower the Cieling is, the Mouldings and Fret-work muſt project the leſs: For a Cieling 10 feet high muſt not have its Ornaments project as much as a Cieling 20 feet high; if it did, the Ornaments would appear a weight to the Cieling, ſo that their *relievo* muſt not be ſo great. I have given in this Plate two different Draughts of them, with their Profiles; and there may be made with judgment great variety of them. I think it better to have them divided into Pannels in this manner, which by its variety gives an agreeable diverſion to the Eye, than to have the whole in one large Pannel, which would make it appear too heavy.

Of Frets or *Guilochi's*.

PLATE LIX.

THESE little Ornaments called Frets or *Guilochi's*, wrought in the flat Borders of Frames, if well proportioned, have a fine effect. I have drawn on this Plate ſeveral different ſorts of them. The firſt is the *Vitruvian* Scroll, drawn either plain, or adorned with Leaves and Sprigs. The ſecond is a Fret reſembling a Knot. The third is a different Knot. The fourth is a Fret-border of eleven diviſions done two ways, the diſtances of the ſinking and riſing parts being equal. The fifth is a Border of two different Frets of nine diviſions. The ſixth is a Border of two different Frets of ſeven diviſions. Theſe Ornaments are proper to be placed in Picture-frames, Sofites of Arches and Architraves, on *Faſcia's* and Plinths of Baſes, when the reſt of the members are carved.

Of Block-Cornices and Ruſtick Coines.

PLATE LX.

YOU have here three different ſorts of Block-Cornices; their diviſions are marked on the left hand. But to make them more plain, I have drawn the Profiles of them larger on the next Plate. As to the Ruſtick Cornices, they have a proportion to each other as 2 to 3, and their champhered Edges, or Ruſticks, are $\frac{1}{4}$ of their height.

The Profiles of Block-Cornices.

PLATE LXI.

THESE Profiles are each of them divided into eight parts, which are ſubdivided to form their members. They do not project ſo much as they are in height, as other Cornices. The projection of the *Cima* a-top muſt be reduced to a Square; and ſo muſt the little Liſt under it as appears on the Plates. The *Corona* falls upon the fourth diviſion of the Scale below for the projection in two of thoſe Profiles; but in the third the *Corona* falls on the fifth diviſion. The reſt is very eaſy.

Of Balluſters, their Proportions and Diſtances.

PLATE LXII.

I Have given on this Plate five different ſorts of Balluſters. The lowermoſt is divided into eight parts, and its breadth into four, two of which go to the ſolid, and two to the ſwell'd Members. The Balluſters are diſtant from each other one half of their thickneſs. The croſs prick'd lines ſhew the centers of the ſwelling and ſinking members. The Balluſtrade next above this on the left hand is divided into nine parts, and that on the right into ten, and ſubdivided as on the Plate. The uppermoſt Balluſtrades are of a more delicate form, being divided into twelve parts, and ſubdivided to form the Mouldings. Theſe are fitteſt to be done in Wood or caſt in Metal; the others may be made of Stone. Their Caps and Baſes have the ſame proportions with the common Pedeſtals.

Of Balconies and their Truſſes.

PLATE LXIII.

I Have drawn here four different ſorts of Balconies, where the foregoing Balluſters may be uſed from the largeſt to the ſmalleſt. I have alſo given their Profiles ſhewing eight different ſorts of Truſſes that ſupport them. Some are drawn with Architraves, Frizes and Cornices; ſome with Pannels enriched between the Truſſes, others with Heads, Shields and Feſtoons, &c.

The CORINTHIAN Modillion explained.

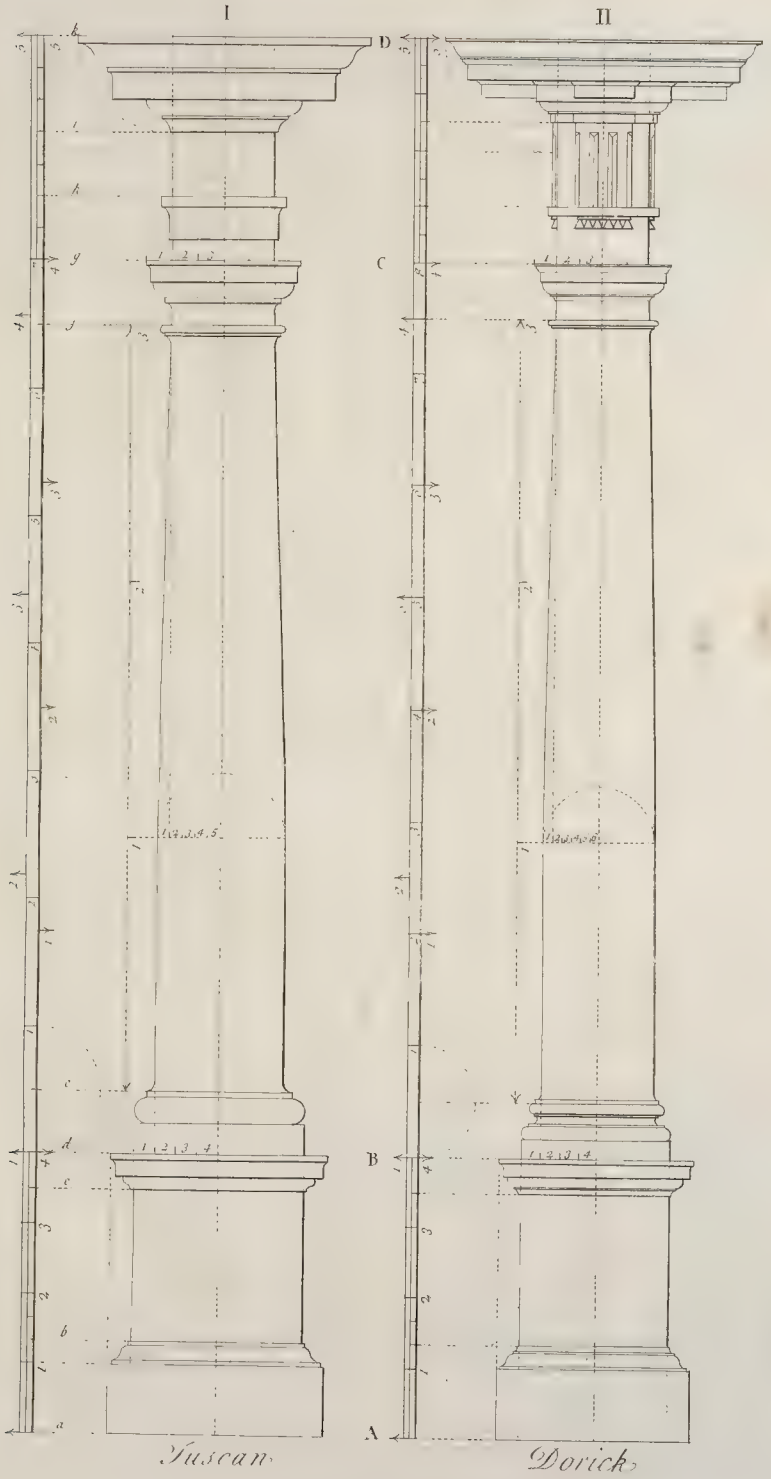
PLATE LXIV.

THE real bigneſs of a Modillion in reſpect to its Cornice is ſhewn in the Profile and Platform of the *Corinthian* Entablature, Plate XVII; and in the Cornice at large, Plate XVIII. On this Plate are drawn at large three Views of this Modillion; the Profile *A*, the under-ſide *B*, and the end *C*. The Profile hath the form of a Scroll, and both ends are turned with a Spiral. The height of the biggeſt is divided into eight Parts; the fifth gives the bigneſs of the Eye, the breadth is ſeven, and the fourth gives the Center. The leſſer Spiral is four

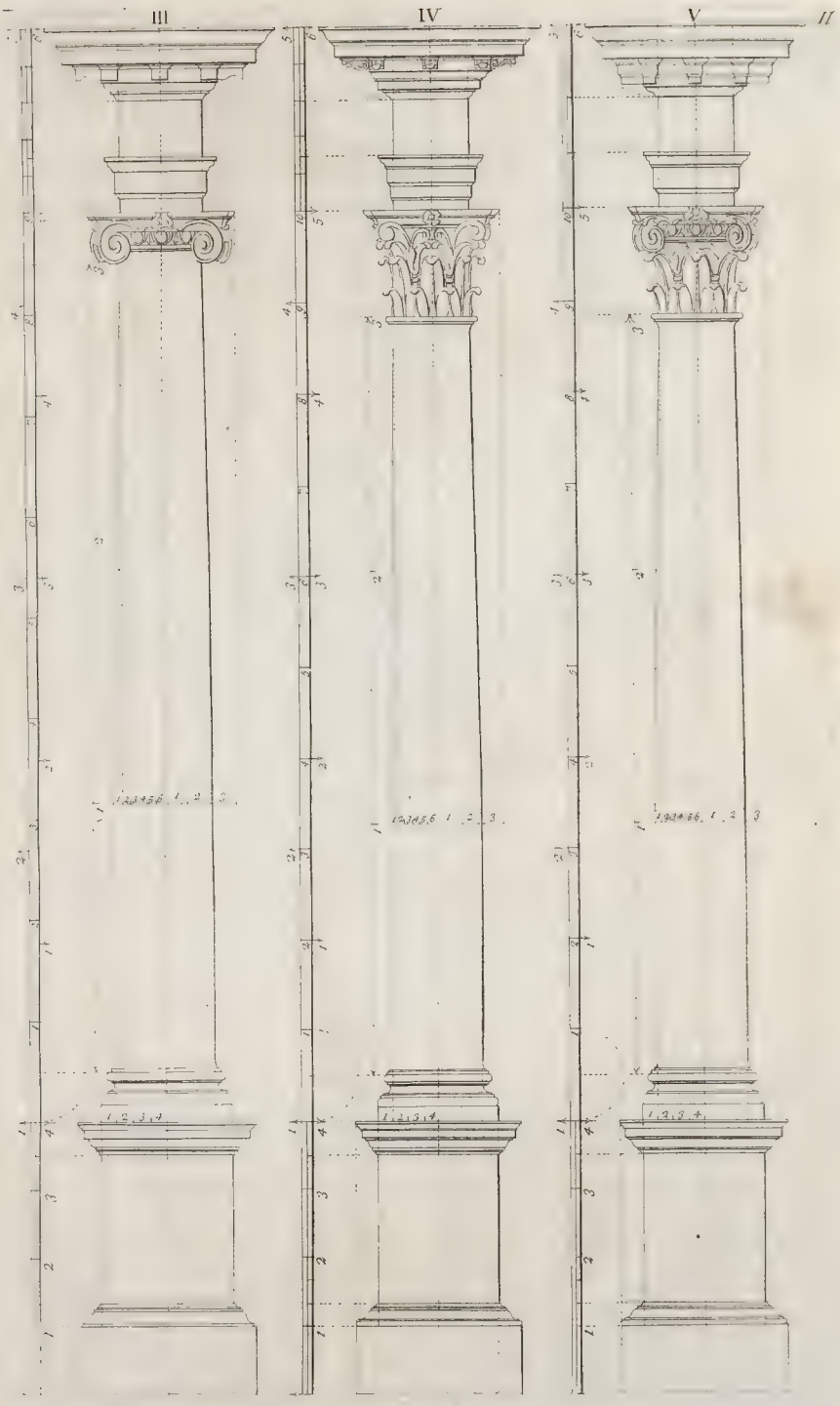
ſevenths

ſeventhſ of the bigger; divide each of the four parts into two, which make eight; the breadth is ſeven, and the Eye one, by the ſame Rule as the former. The Eye is divided into eight different Centers, according to the number of Quadrants which form the Spiral line, explain'd by prick'd lines drawn from each Center, and marked 1, 2, 3, &c. Both Spirals are joined by two Segments; the Center of that which joins to the biggeſt at *a* falls perpendicular upon the firſt Center of the Spiral, and is one fourth part of its height above it. The ſecond at *b* is perpendicular to the inſide of the Roſe, and one fourth of the leſſer Spiral below the Baſe-line of the Modillion; this fourth is divided into three, to ſhorten the perpendicular line by two parts, for the Center of the diminiſhed part *C*; the joining of theſe Segments is where the prick'd line drawn from *a* to *b*, being the Centers, do cut the Segments *a a*, *b b*, *c c*. The end of the Scroll *C* is to be divided into eight parts; one eighth is the bigneſs of each Fillet *d*, *d*, and ſo is the Bead *e* with its Liſts, and each Liſt is one ſixth of the Bead and Liſts; the ſinking of the Liſts or Center of the Bead is three quarters.

F I N I S.



Tuscan. Dorick.


III
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Corinthian
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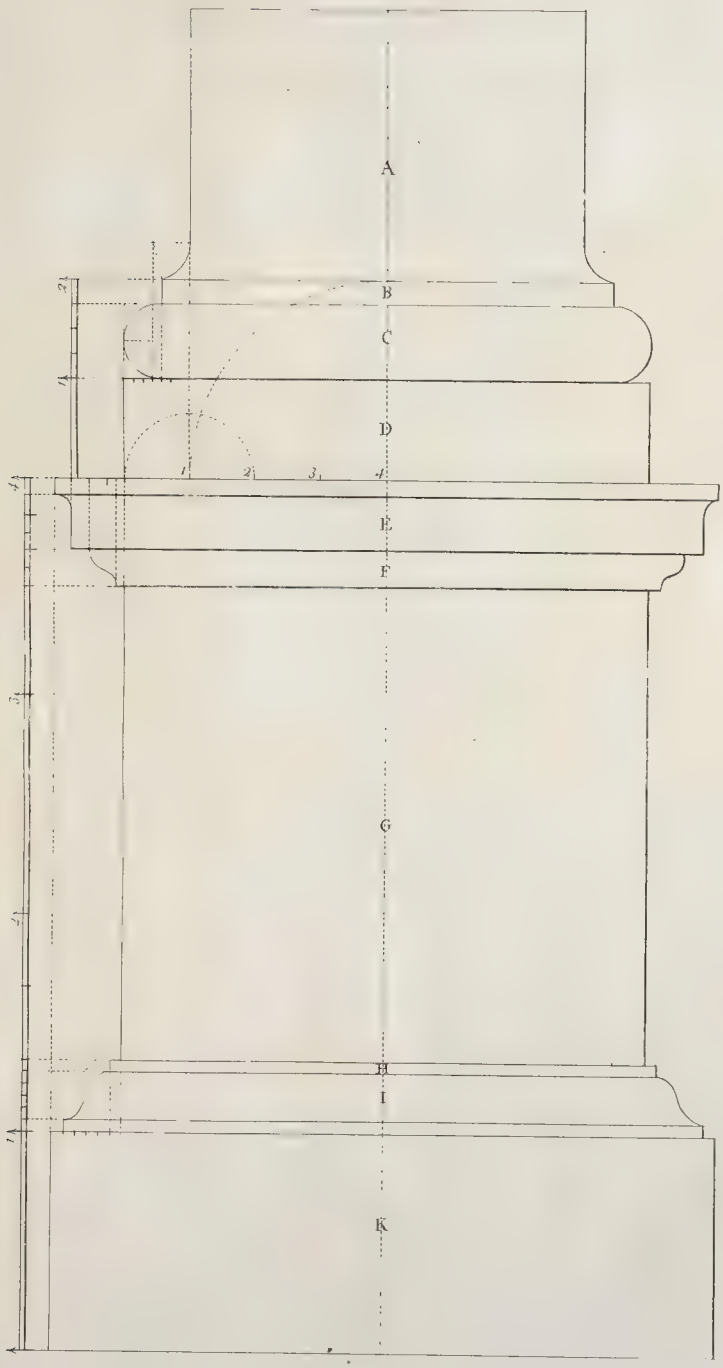
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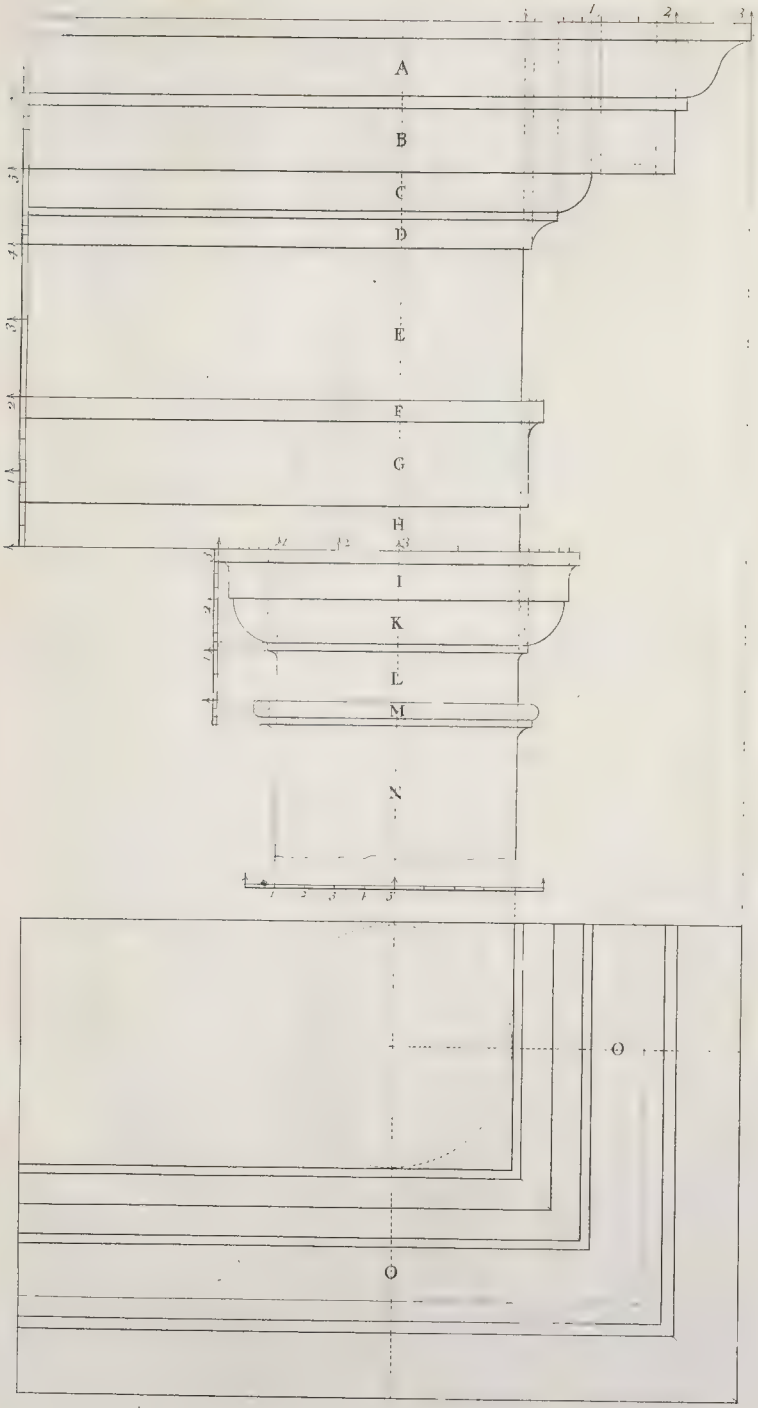
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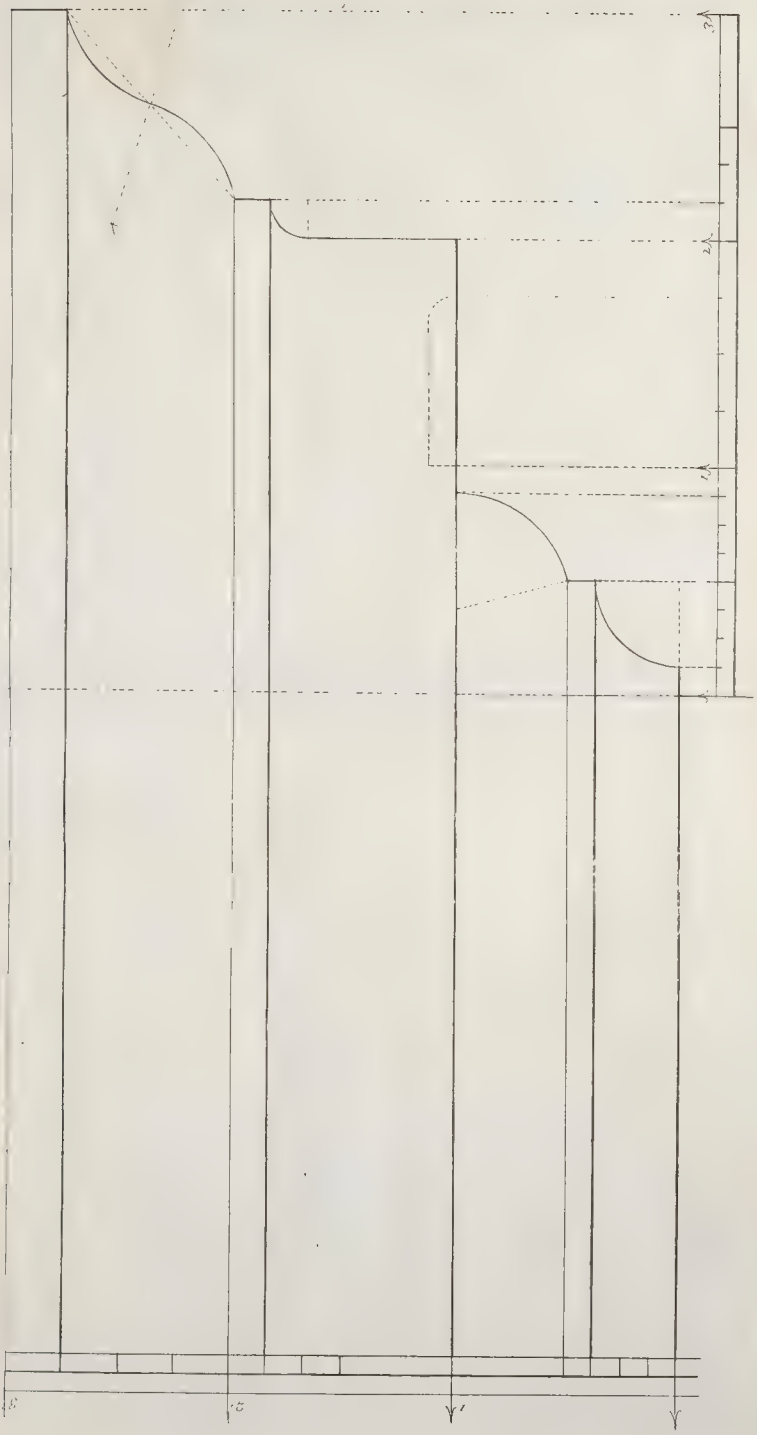
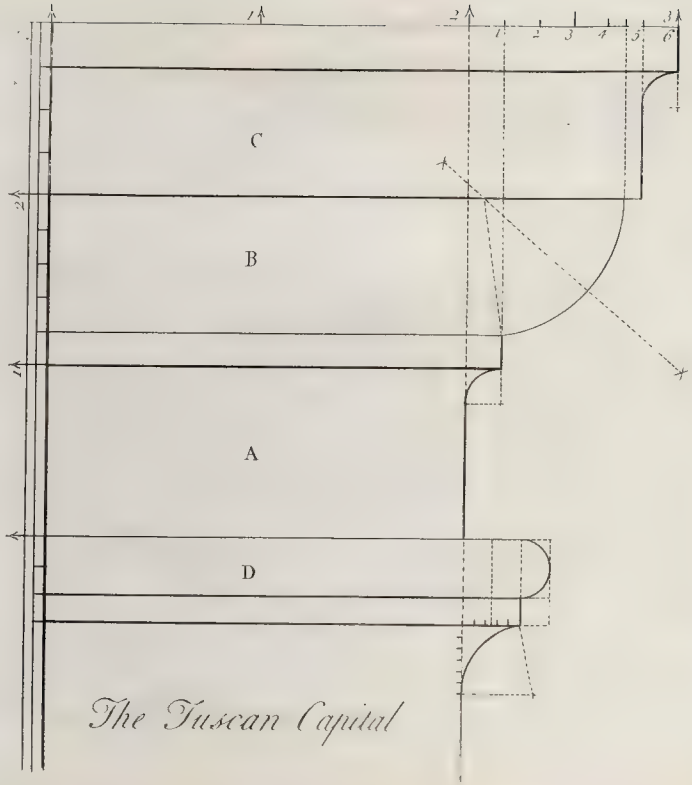
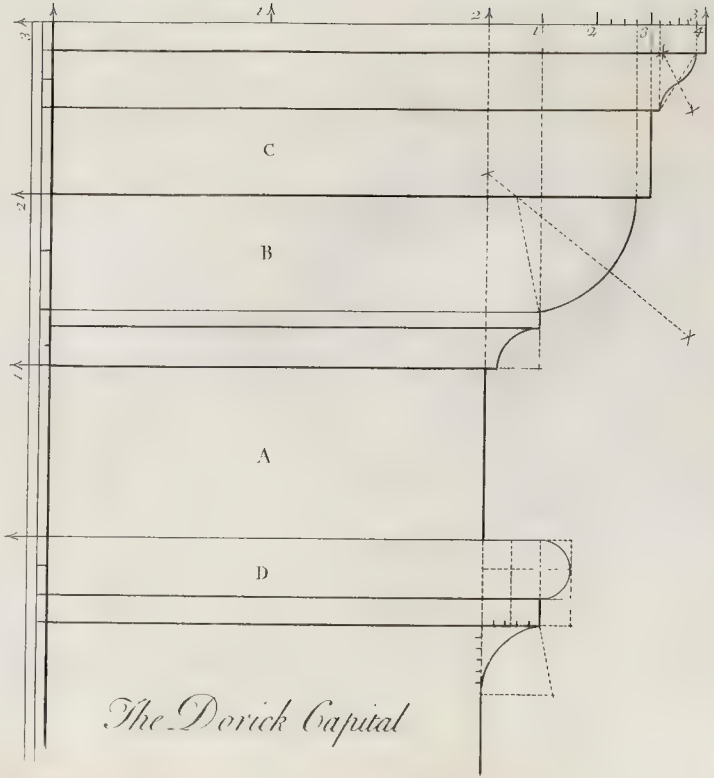
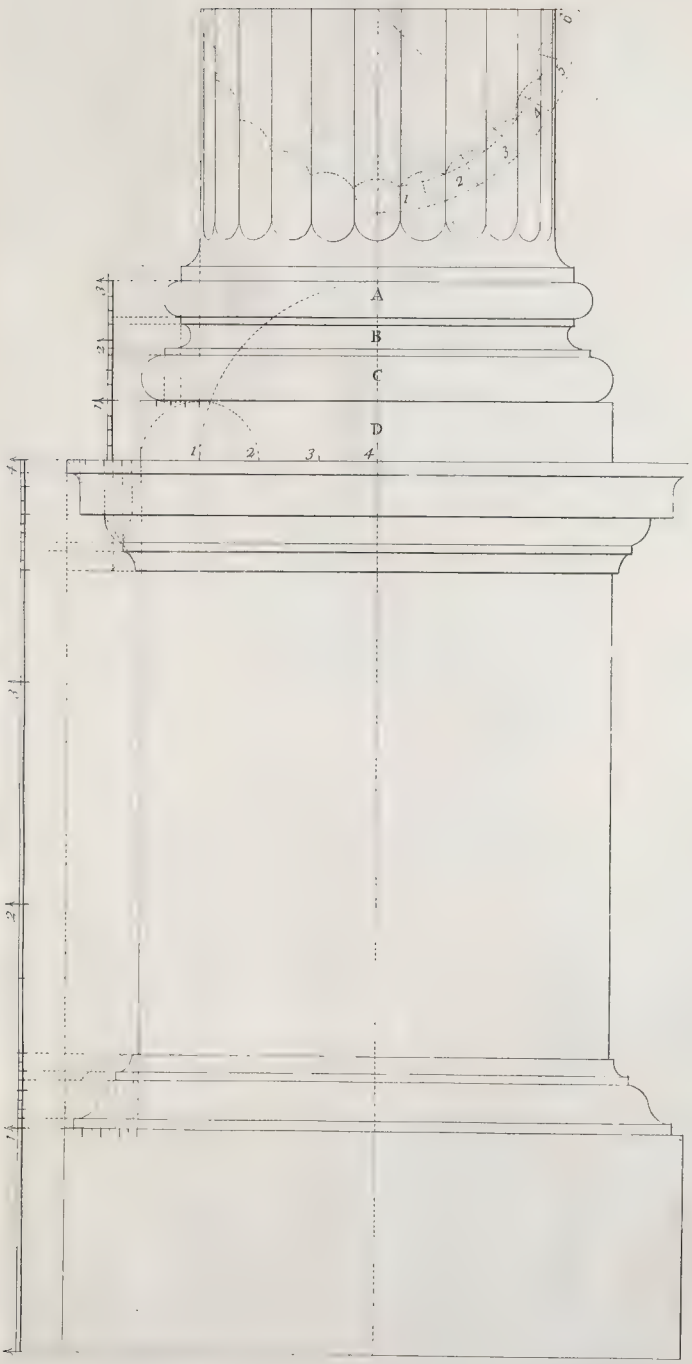




The Tuscan Capital



The Dorick Capital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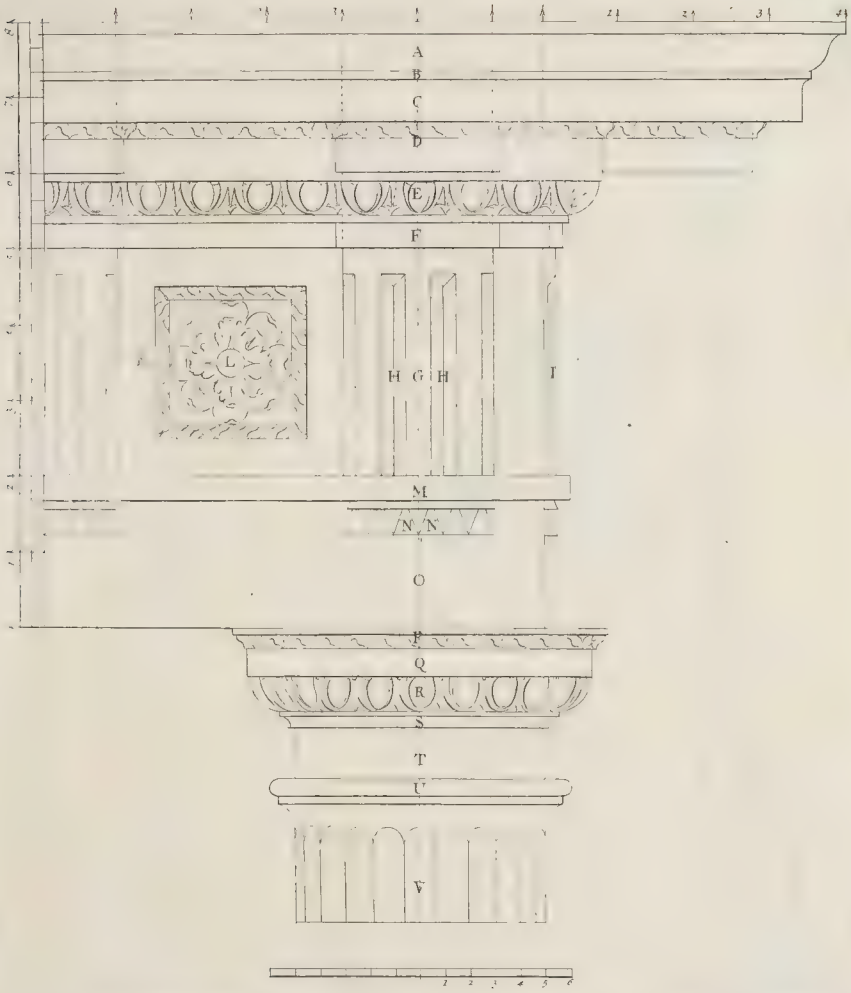
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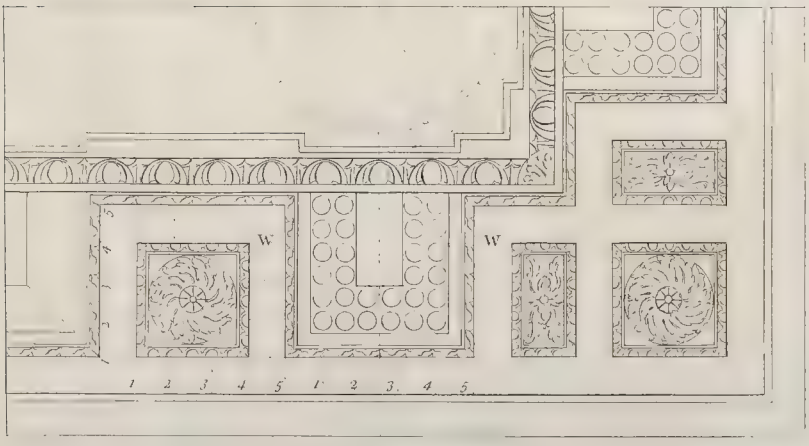
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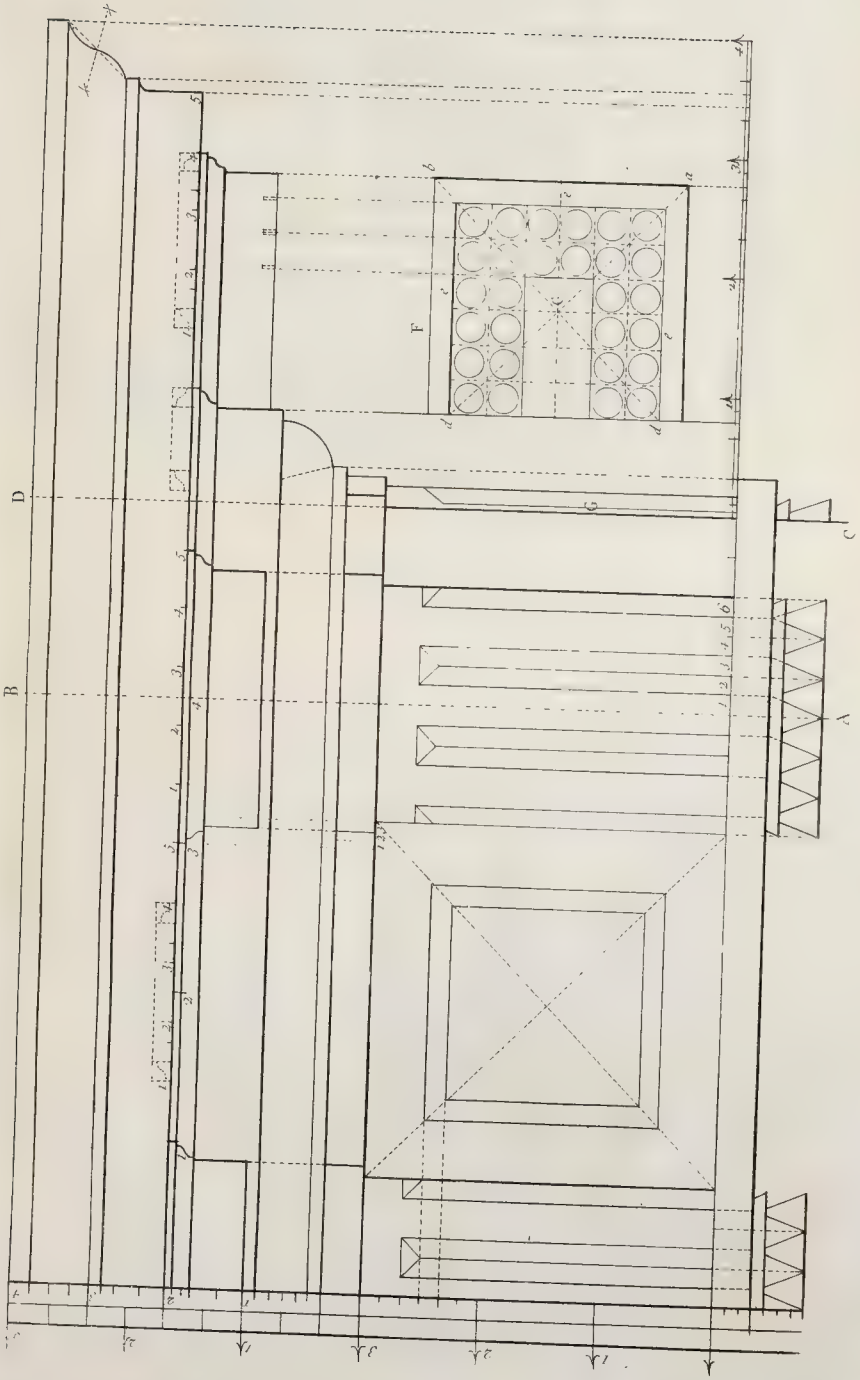
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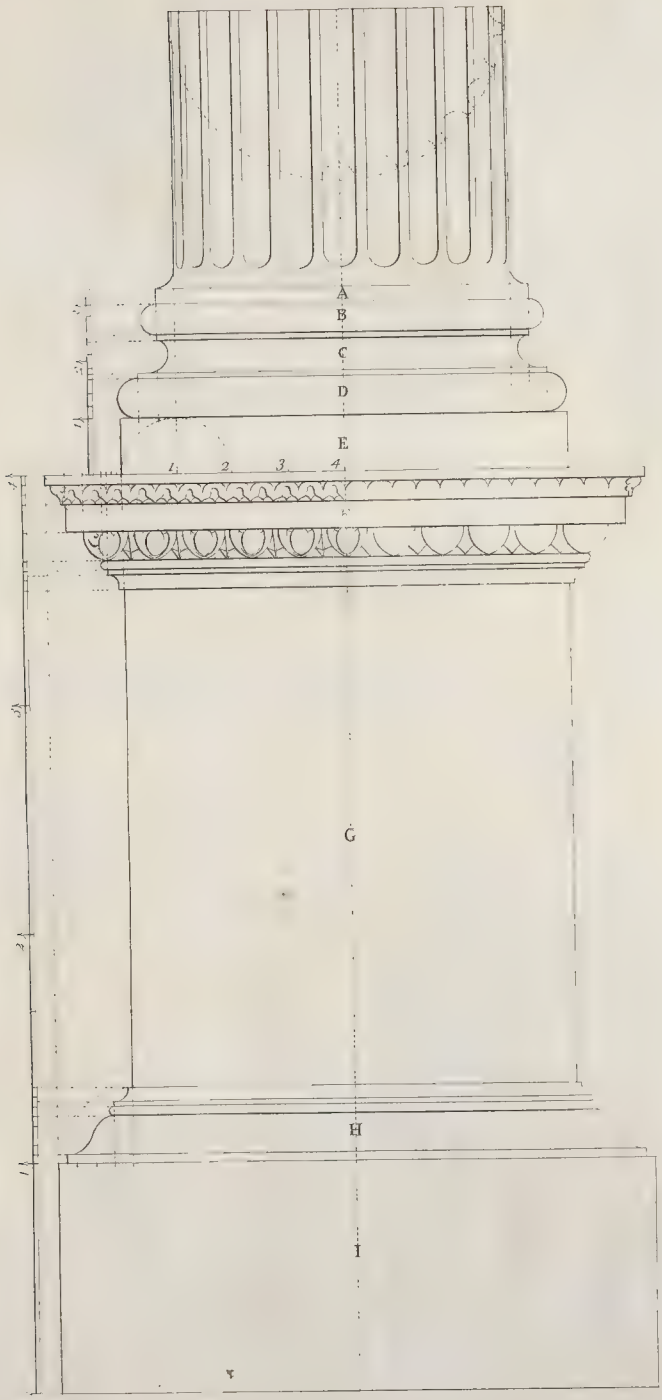
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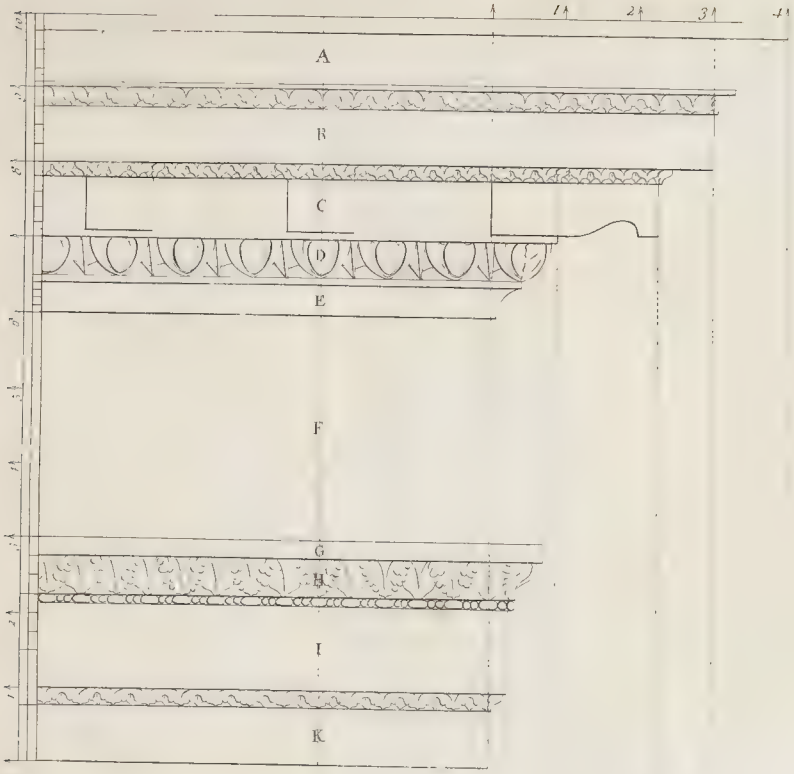
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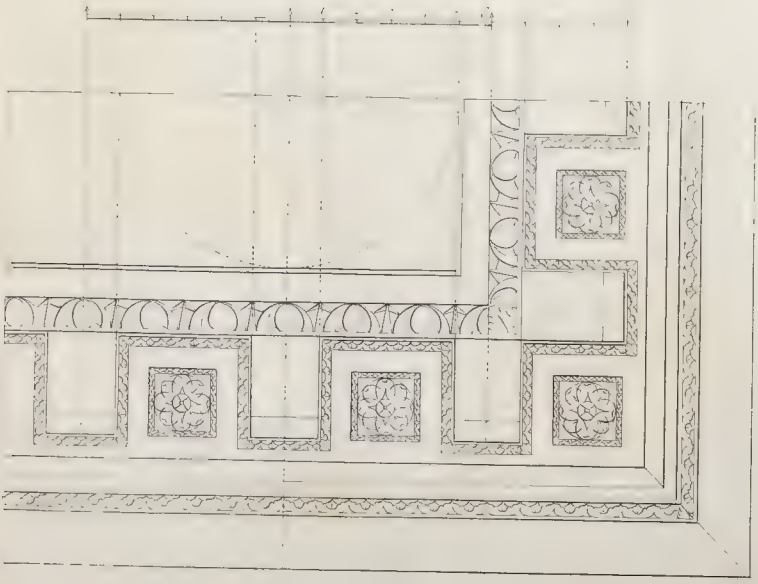

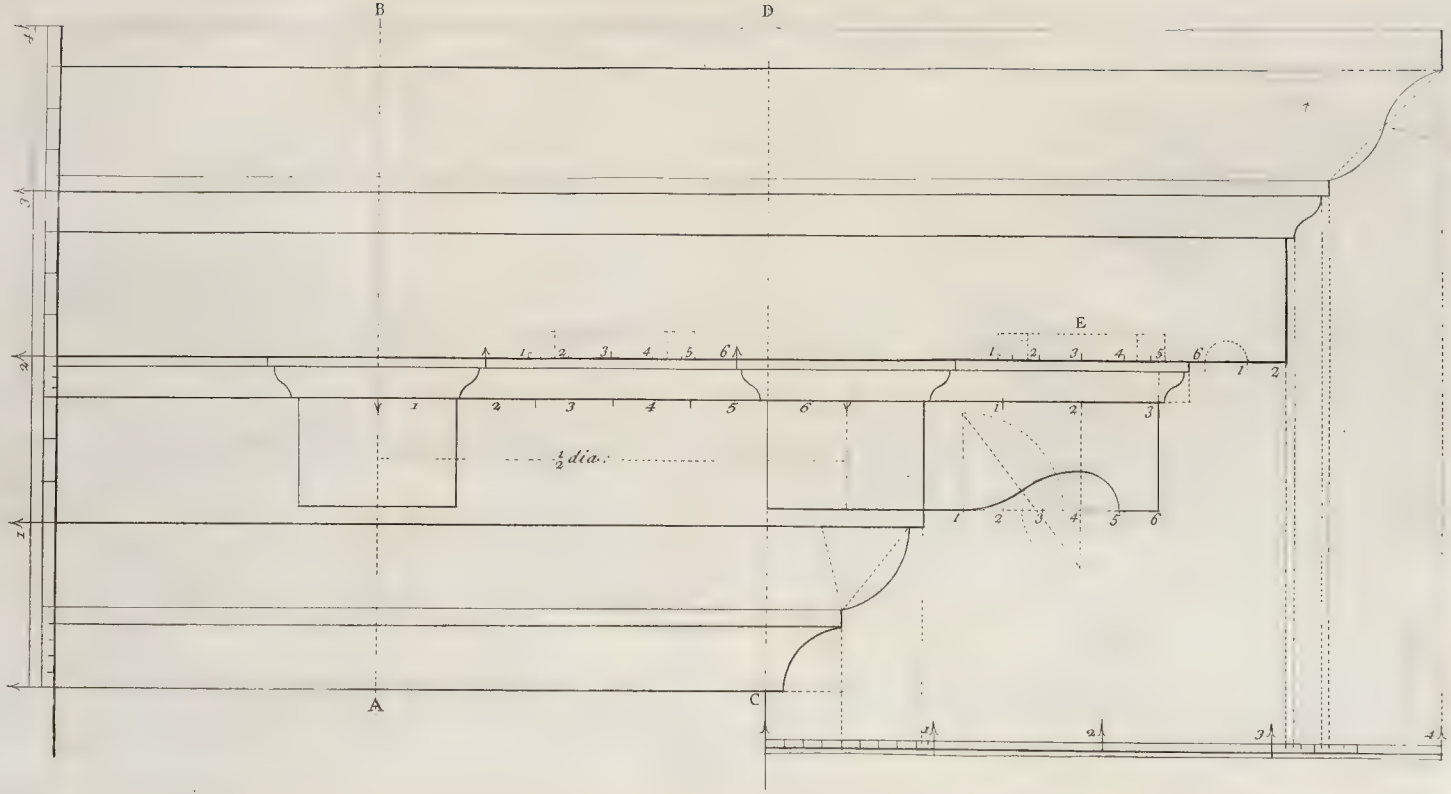
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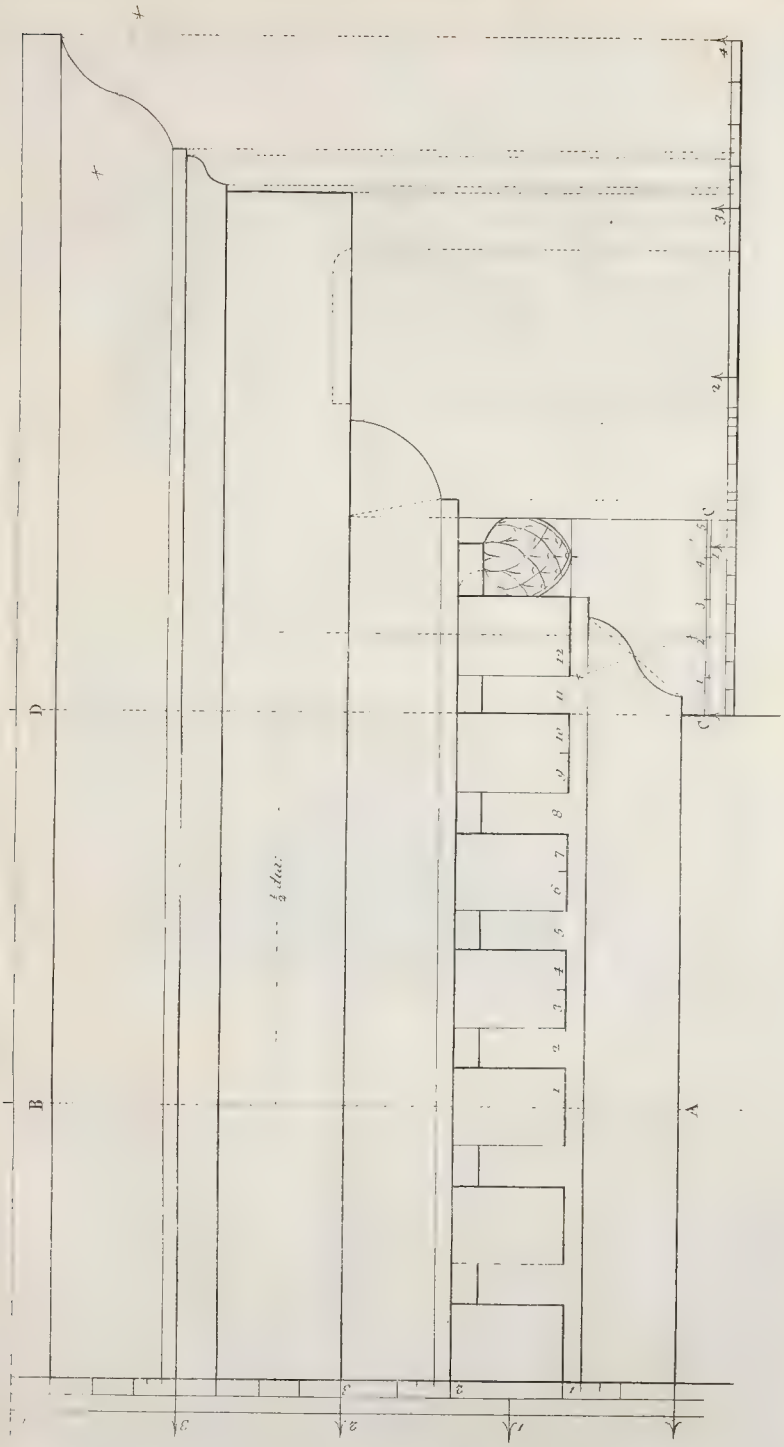

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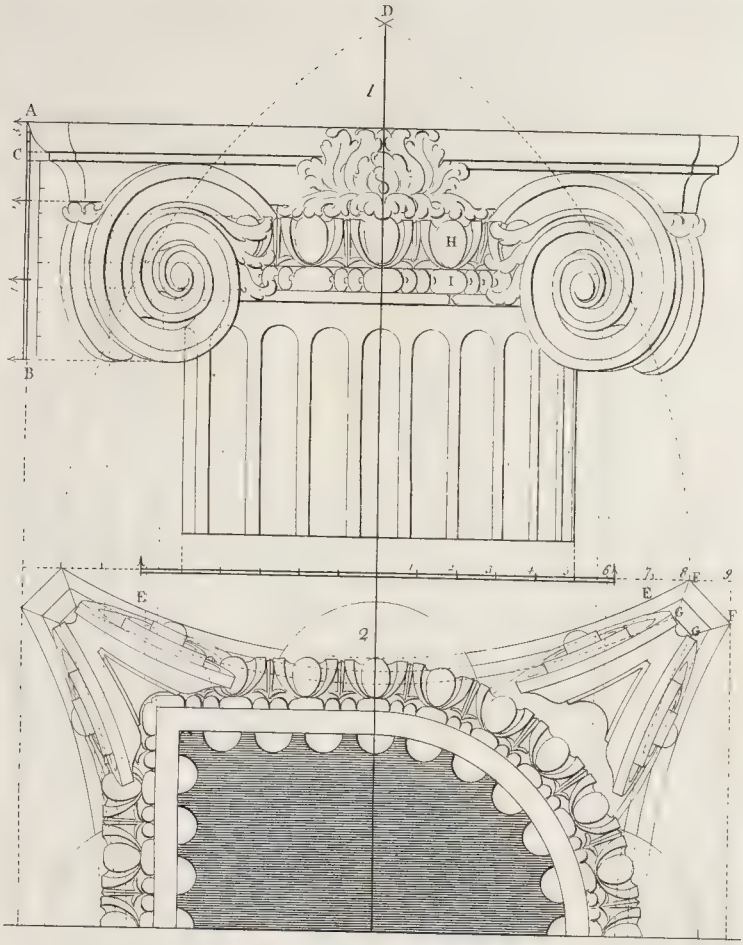
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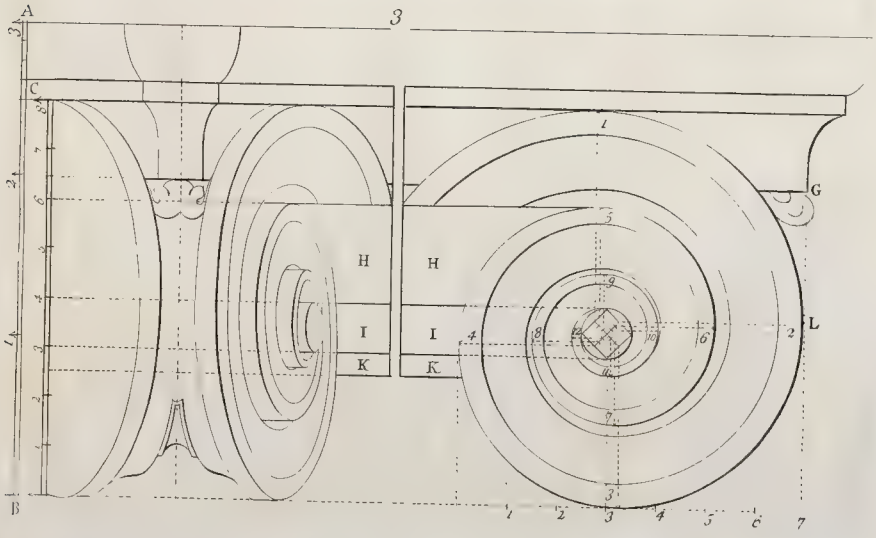
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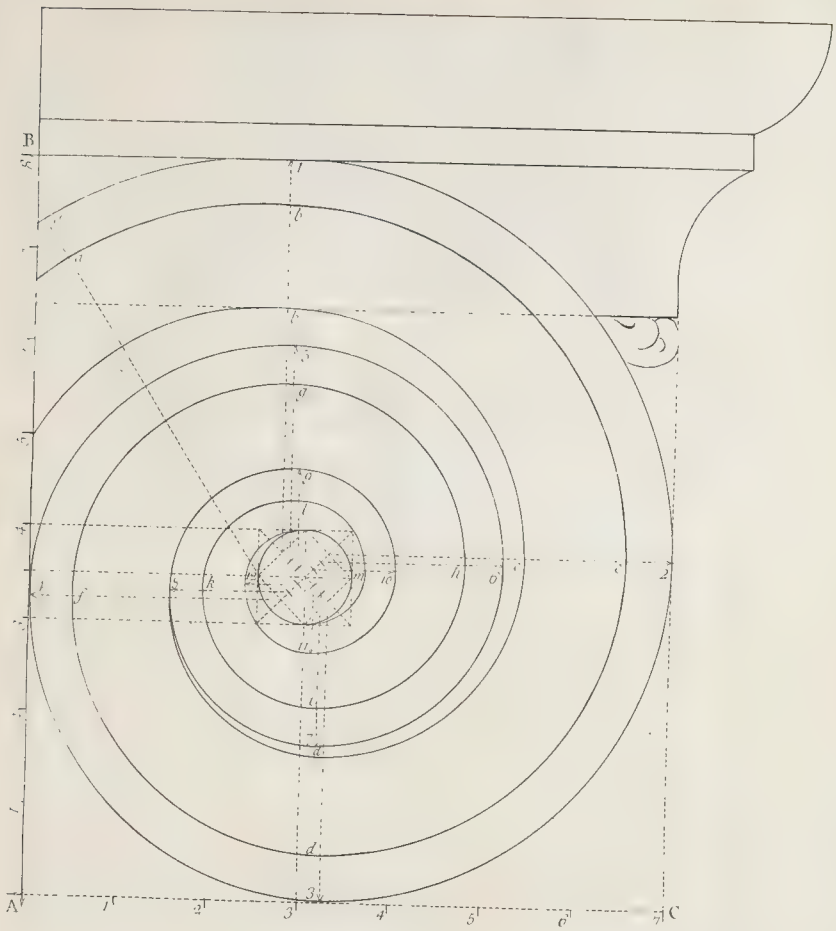
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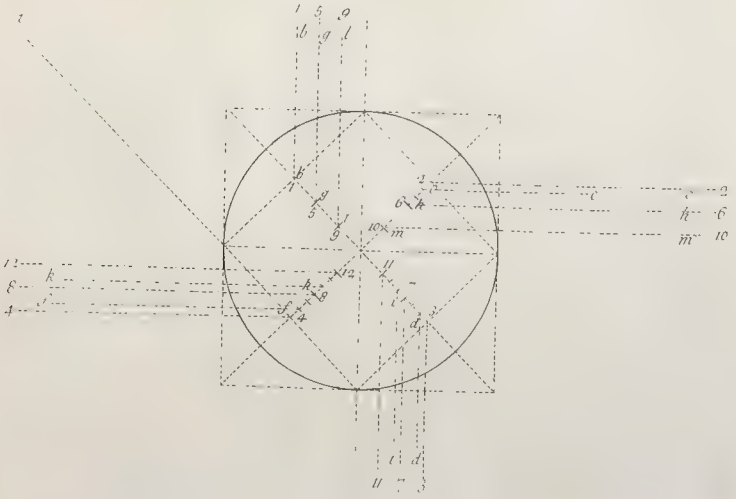

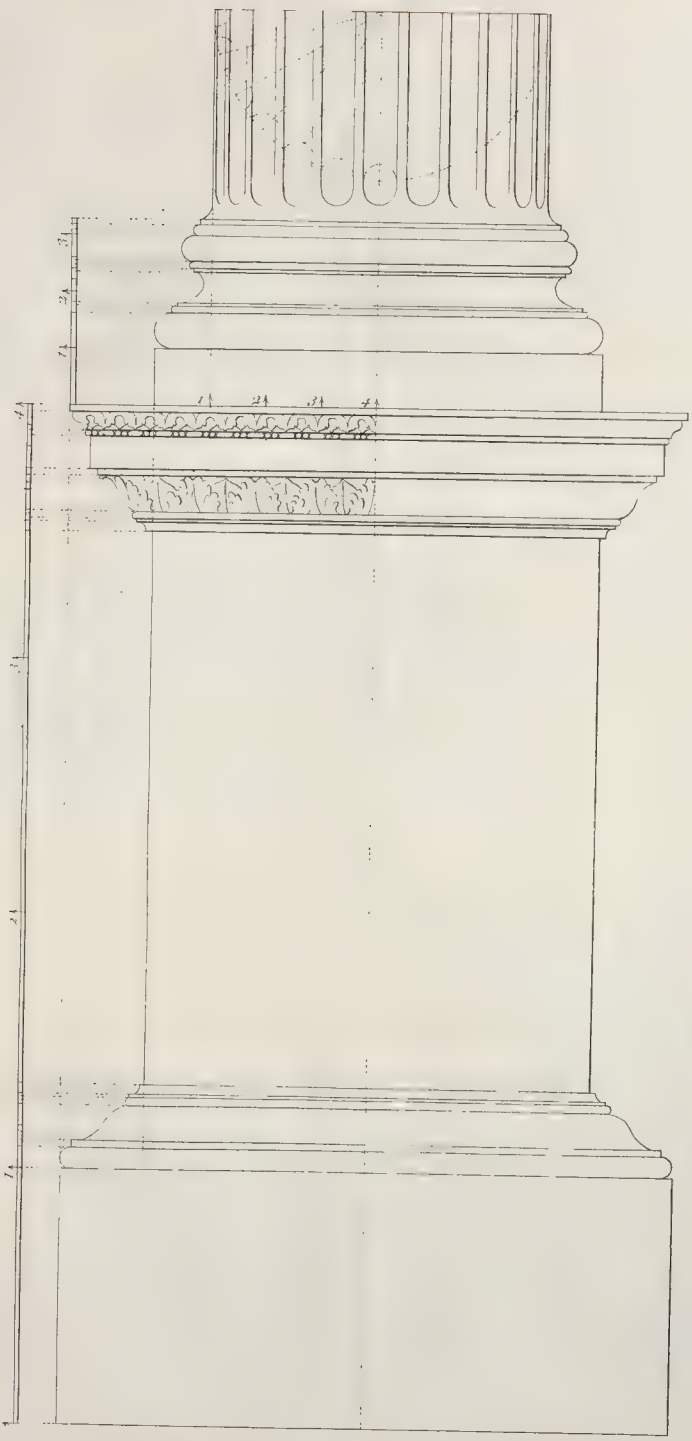

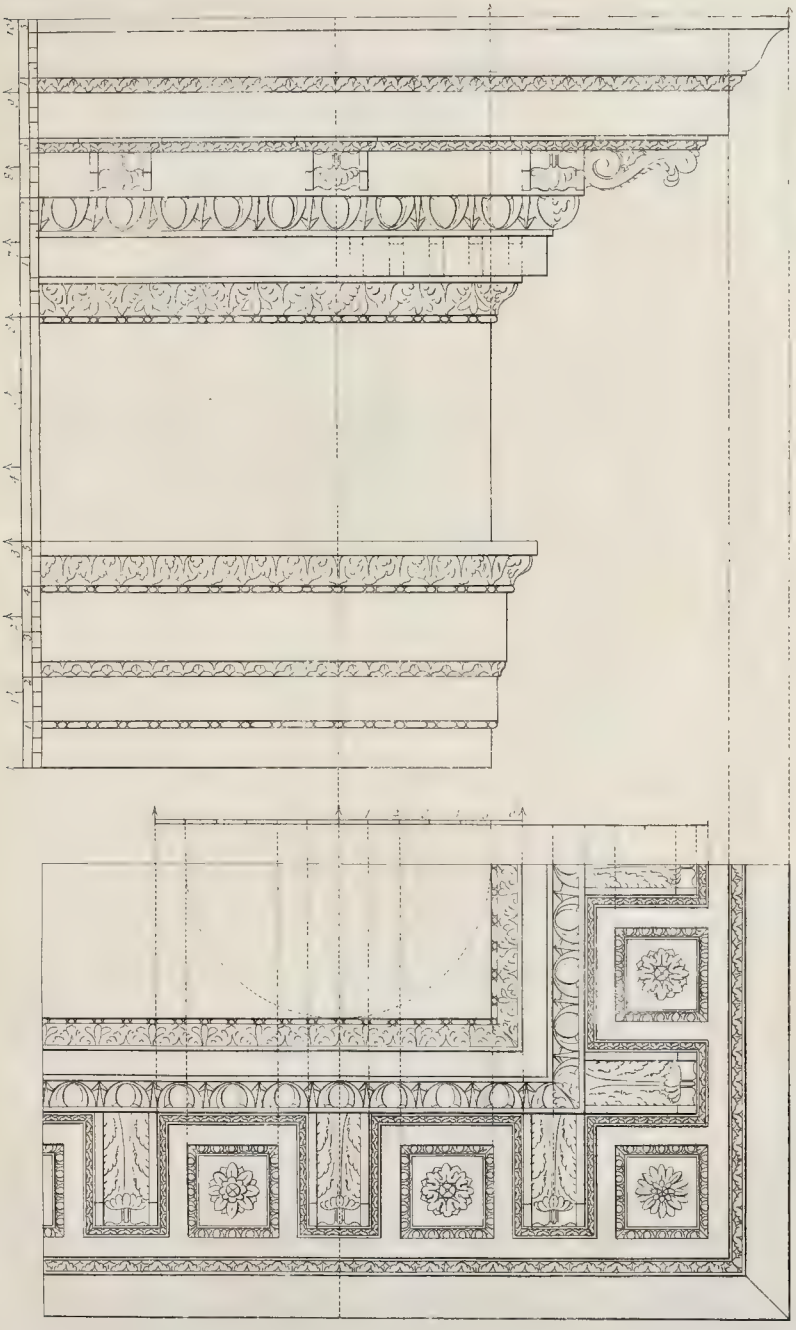

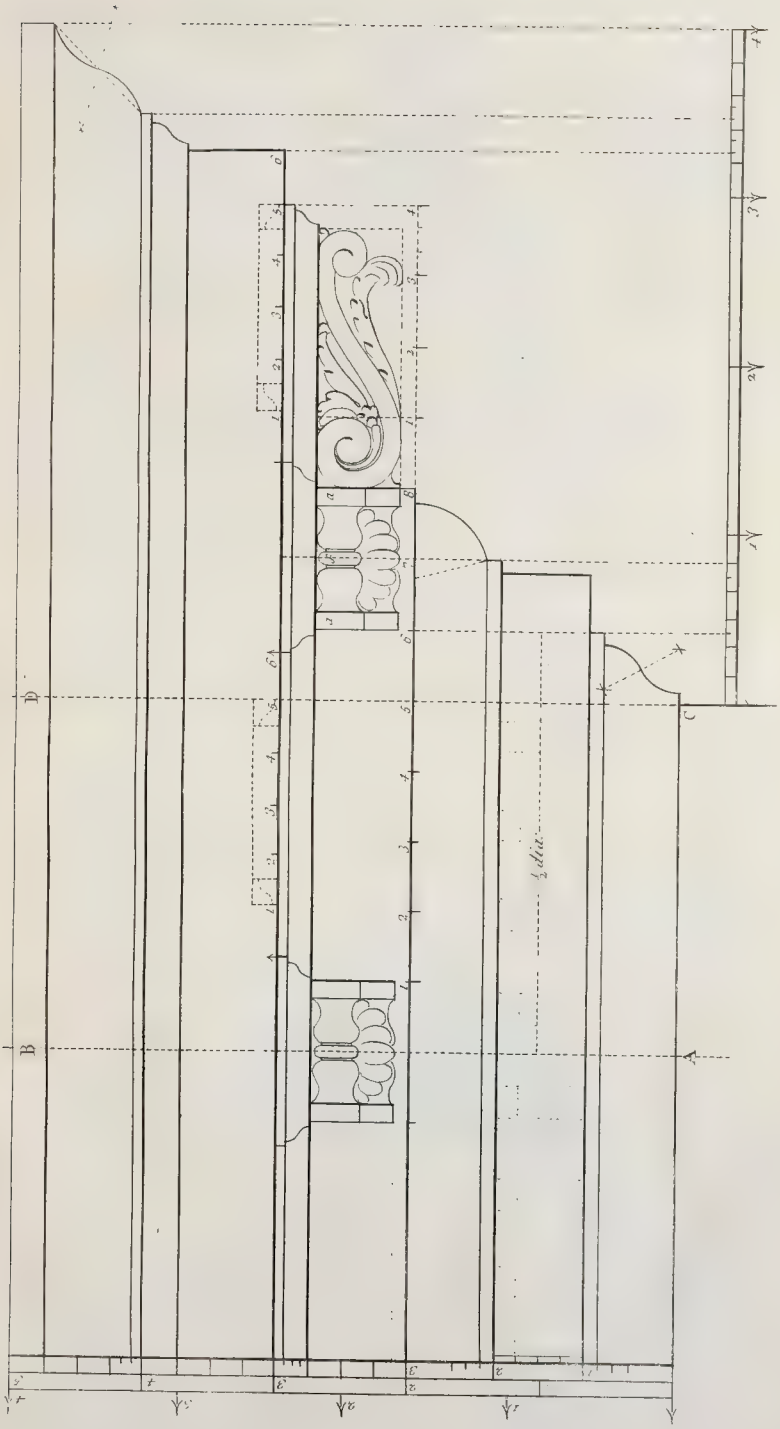
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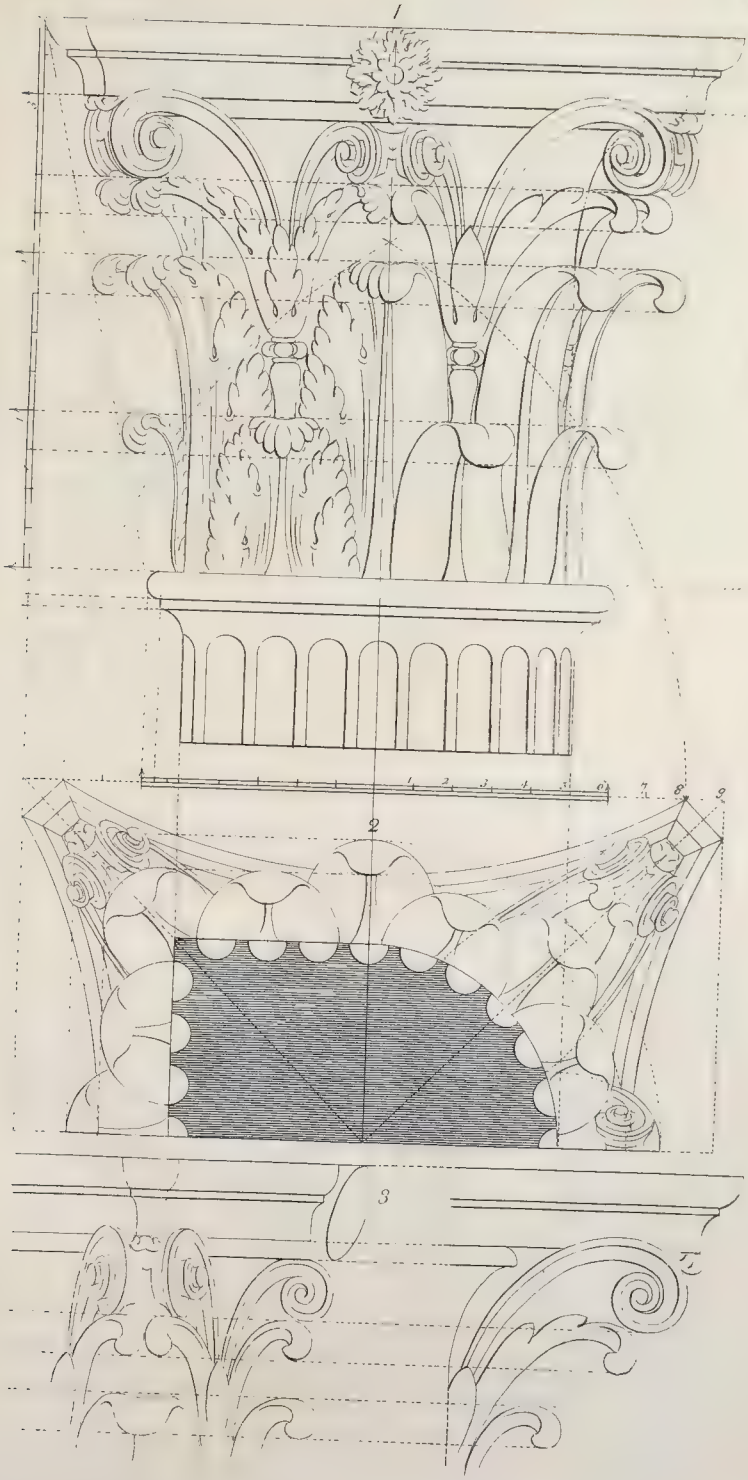
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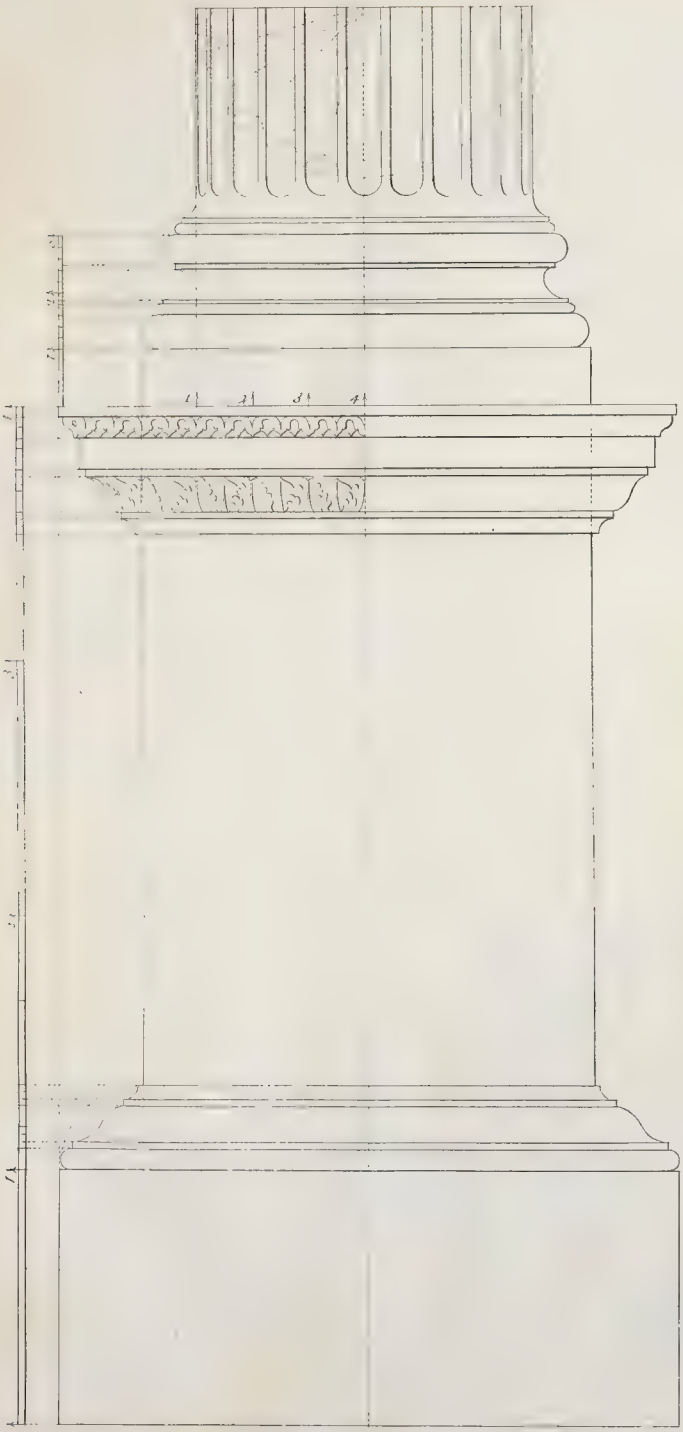

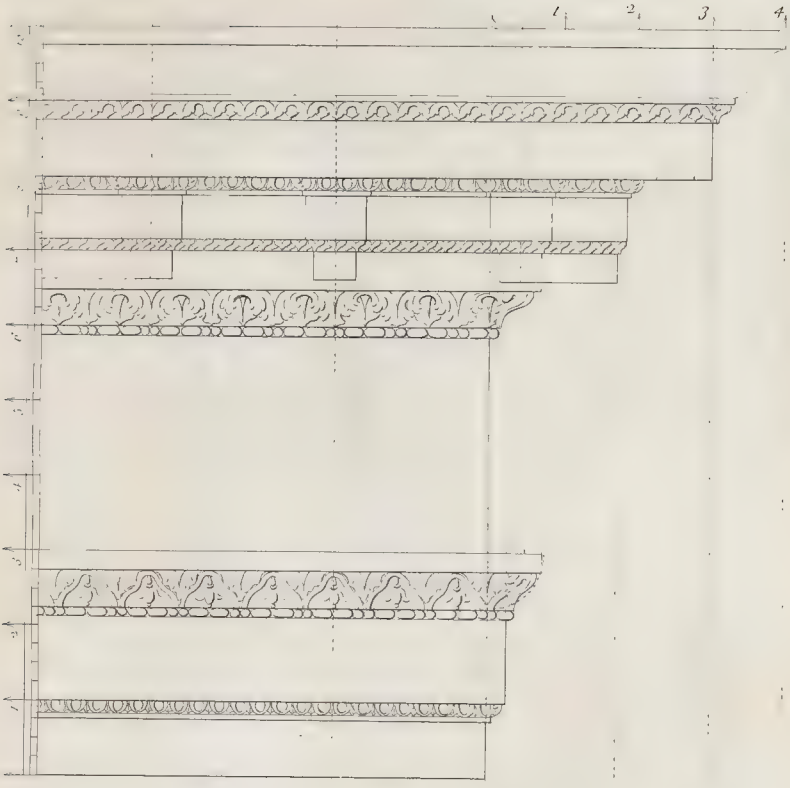
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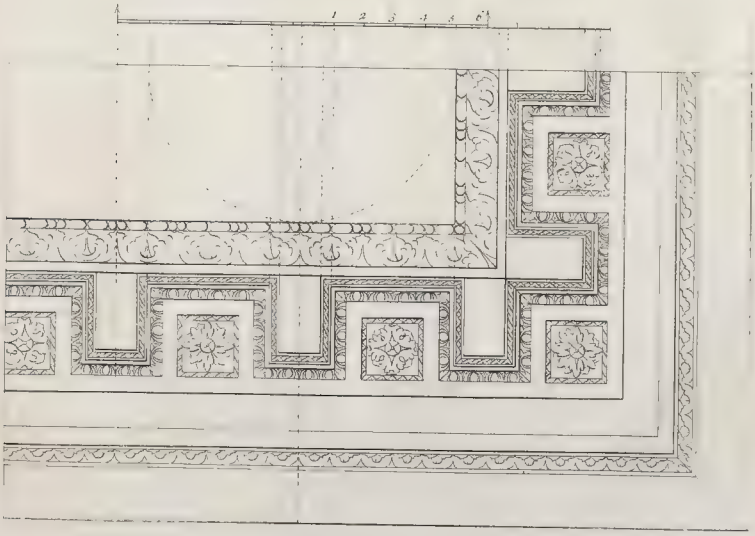
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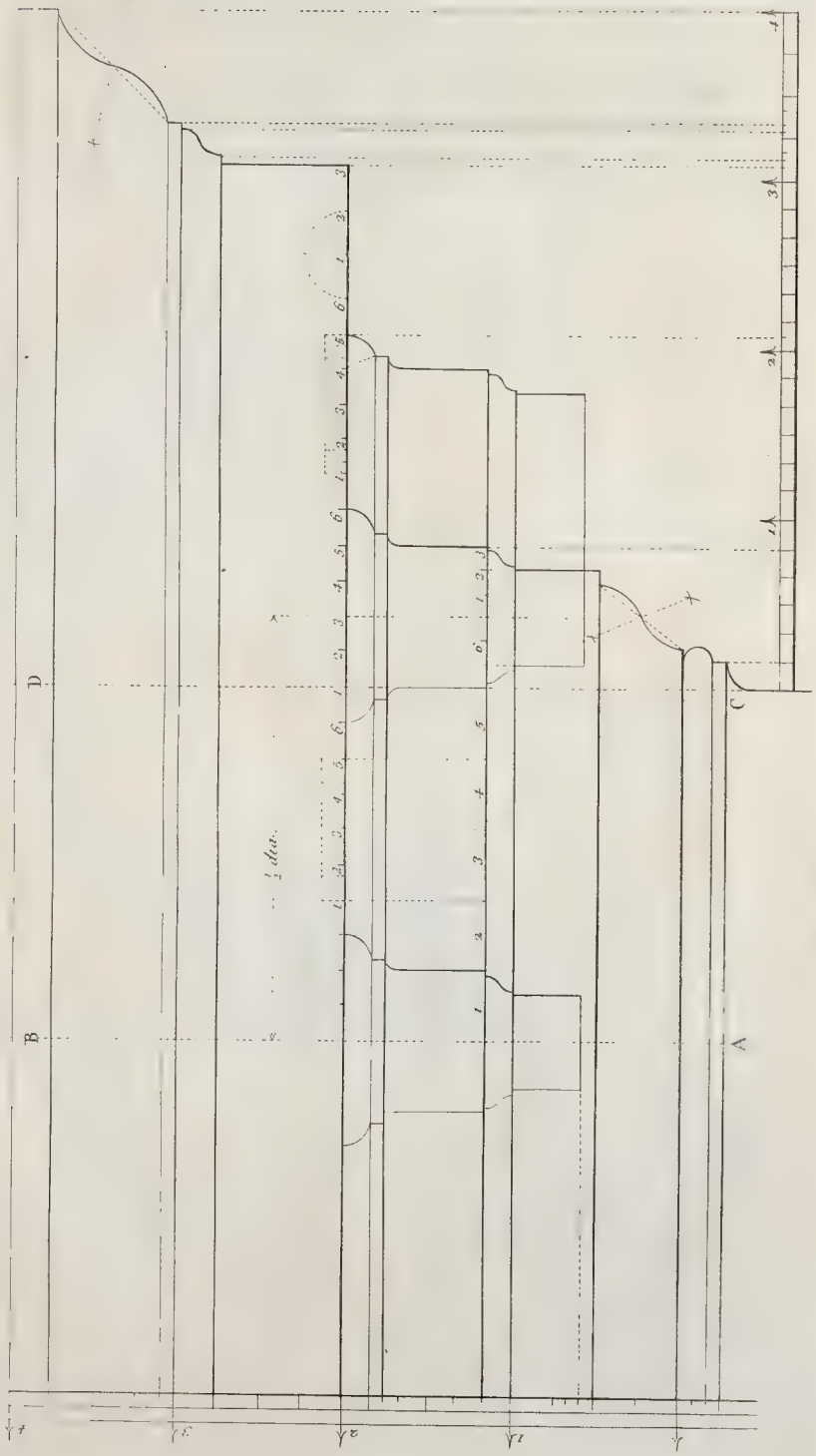
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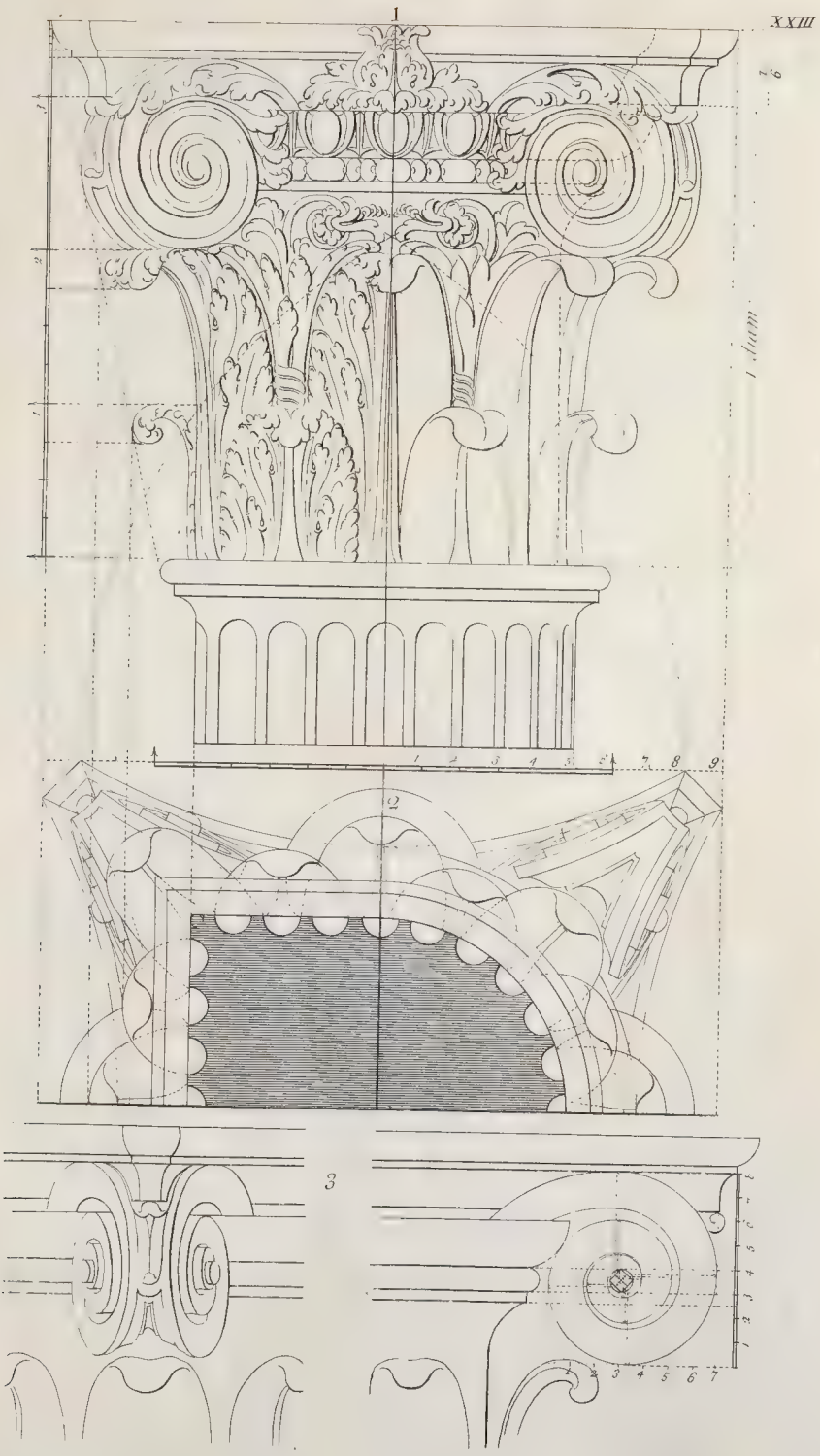
1
1 Diam.
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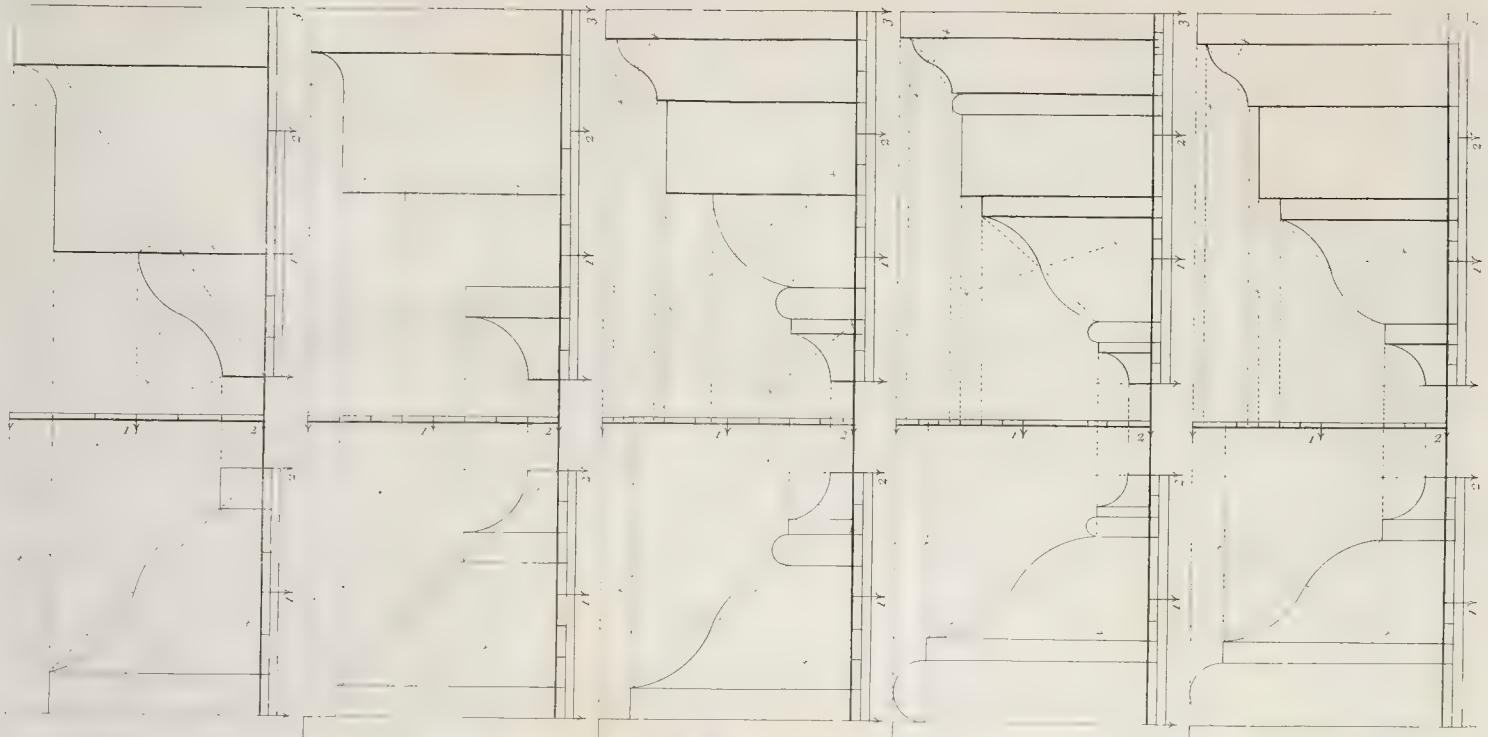

Tuscan *Dorick* *Jonick* *Corinthian* *Composite*

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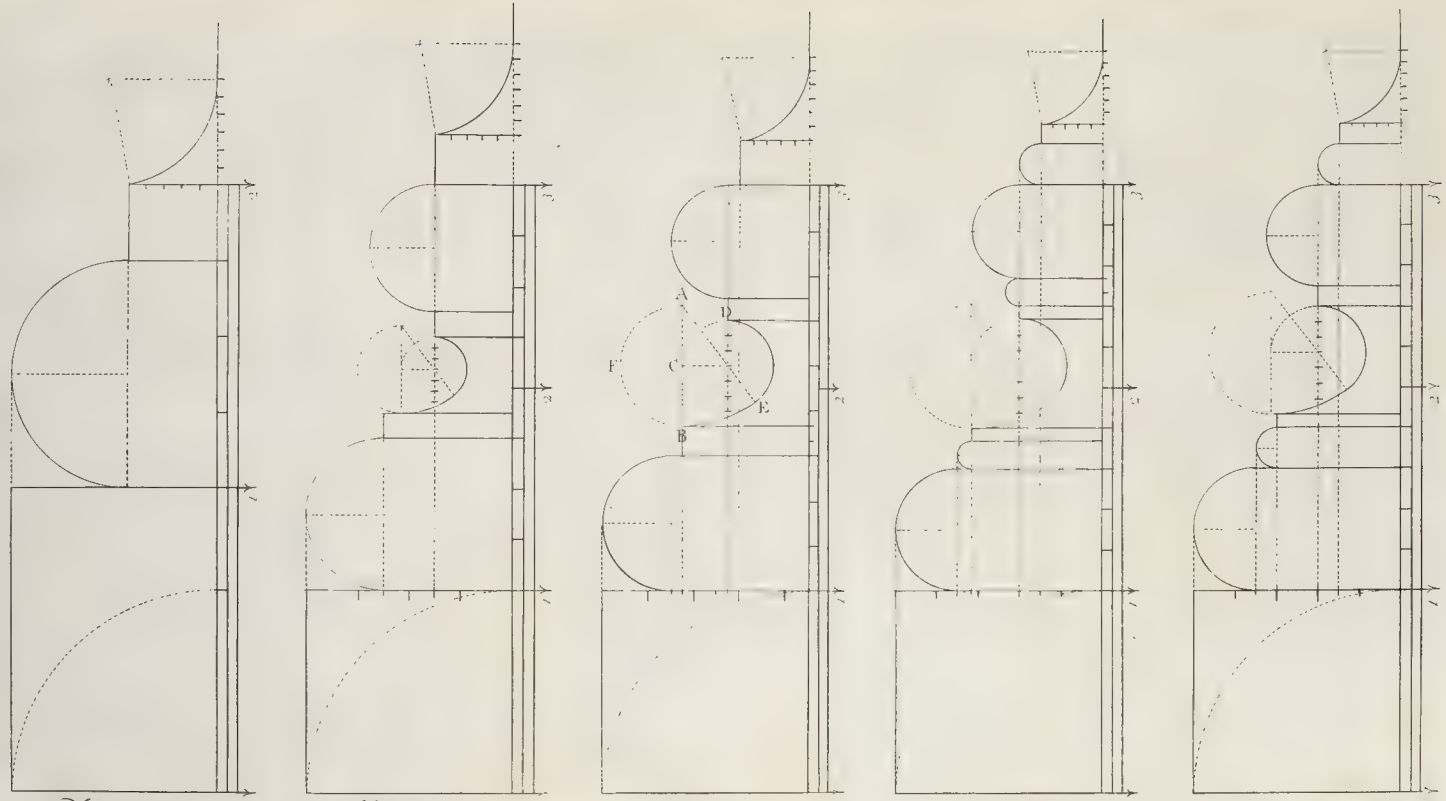
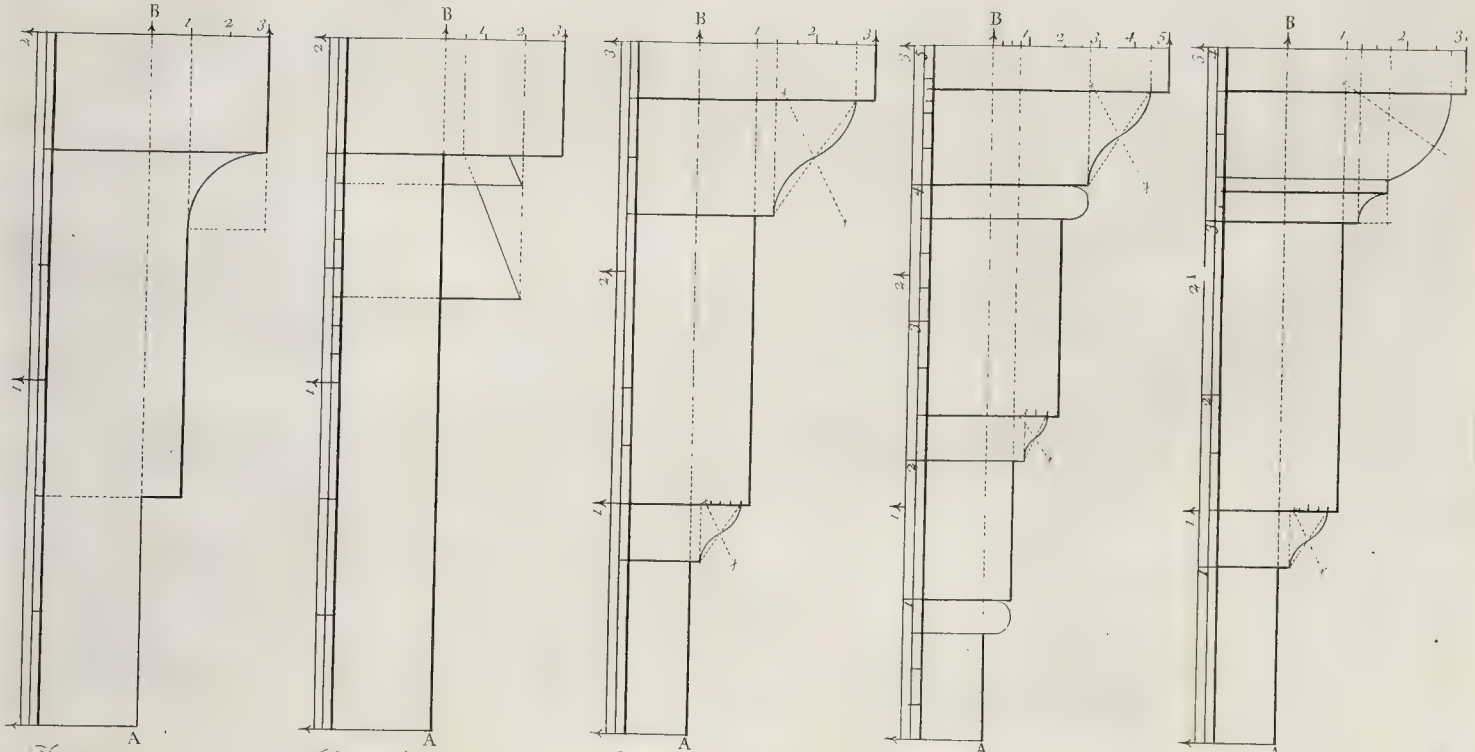


Tuscan · Dorick · Jonick · Corinthian · Composite

XXV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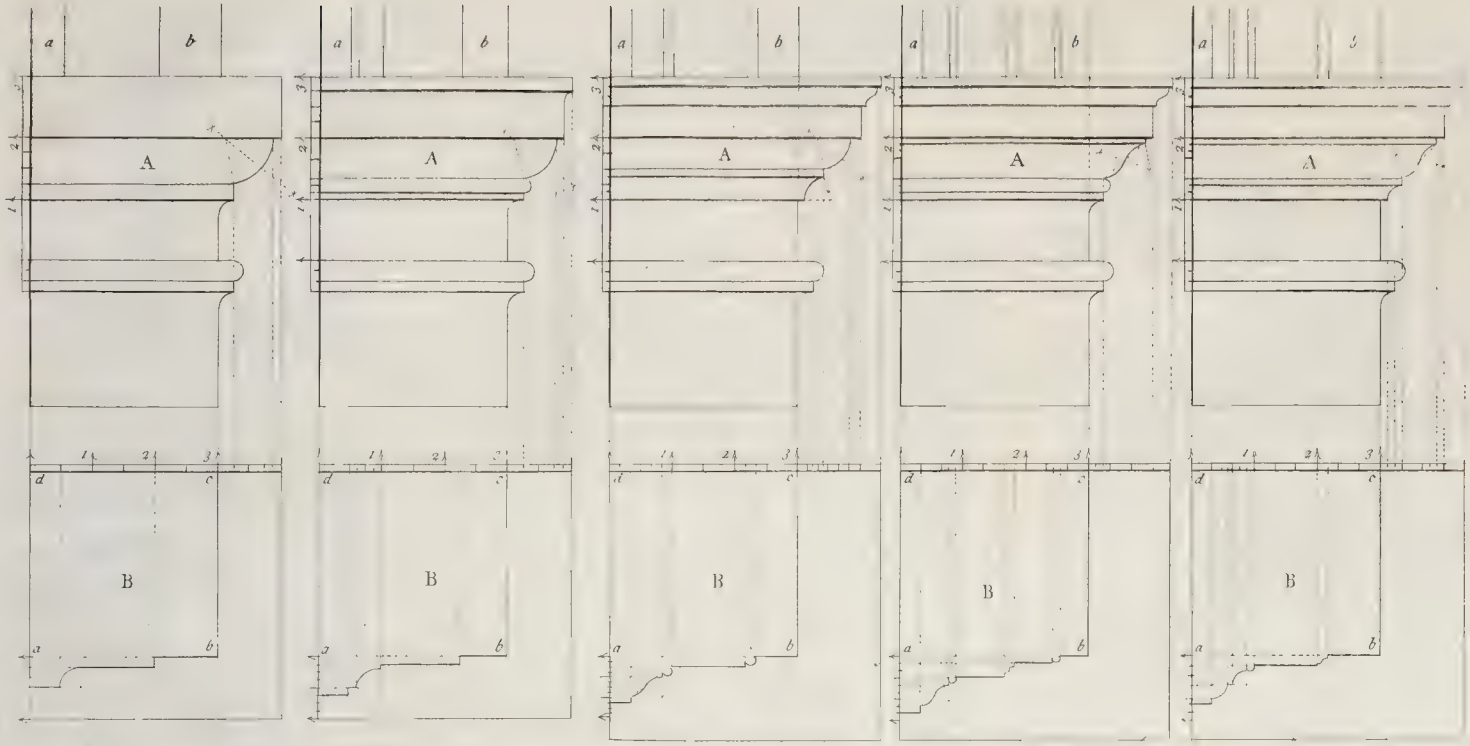
Dorick
Jonick
Corinthian
Composite



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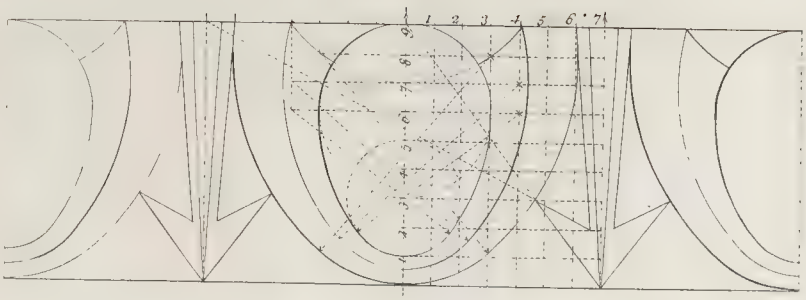
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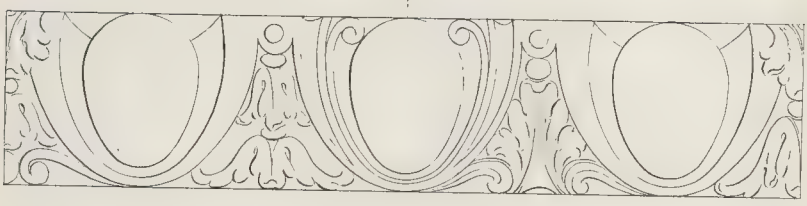

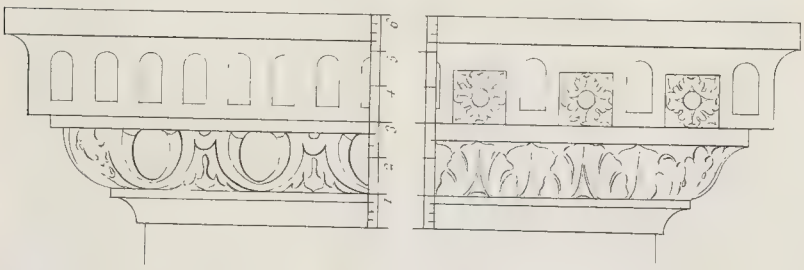

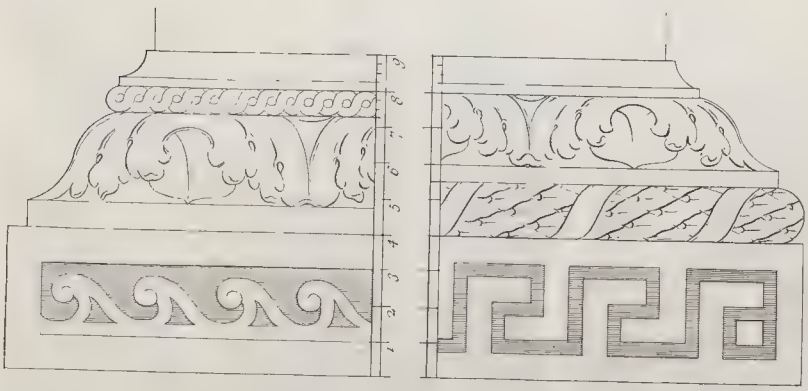

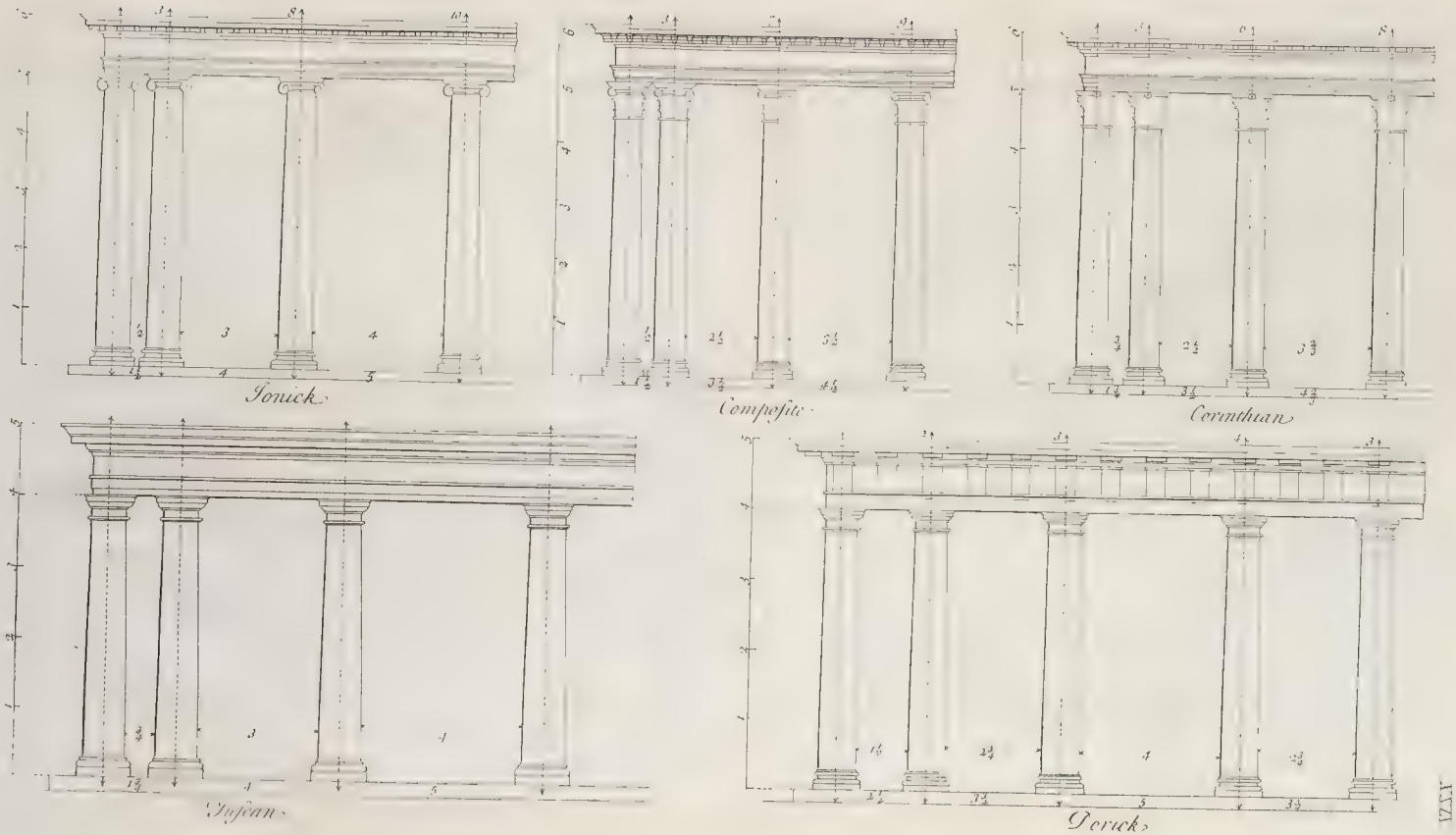
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Tuscan
Dorick

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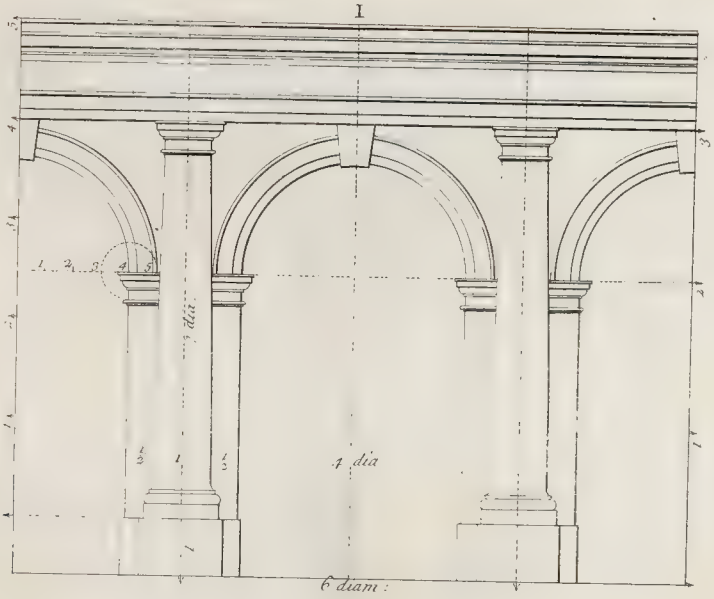

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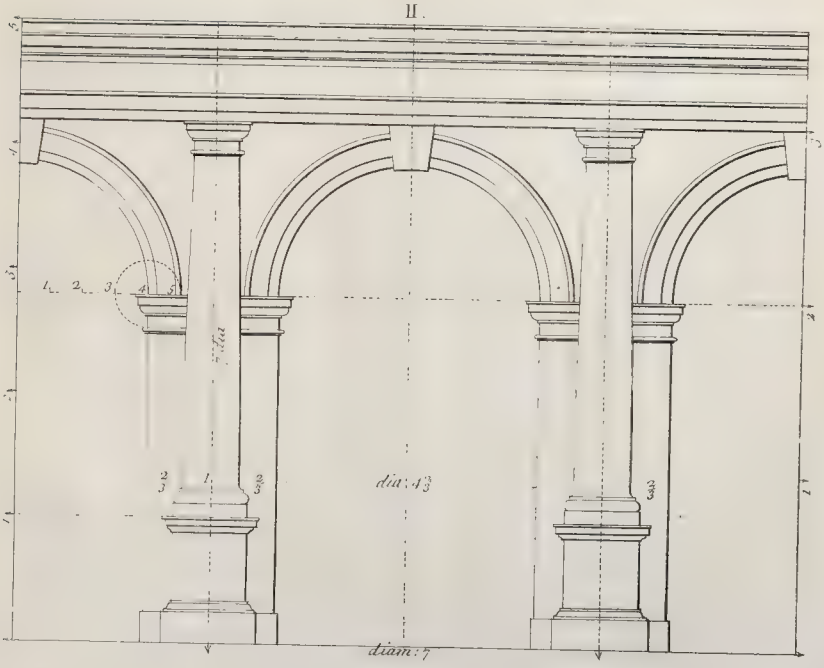

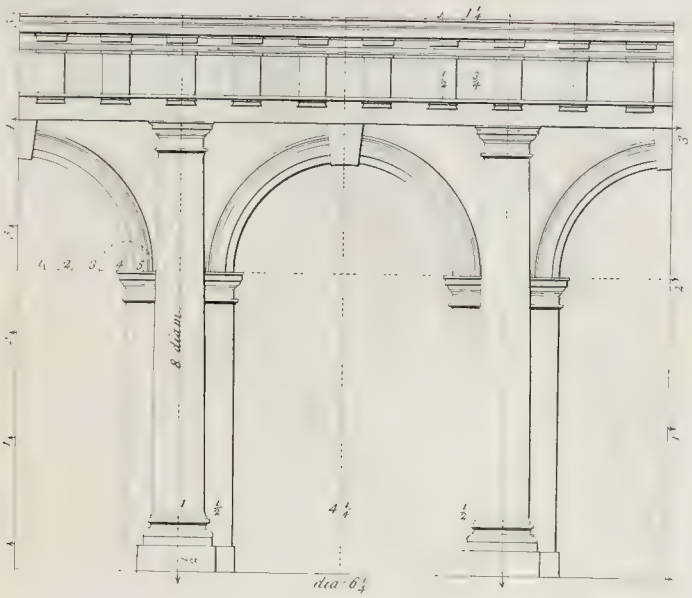
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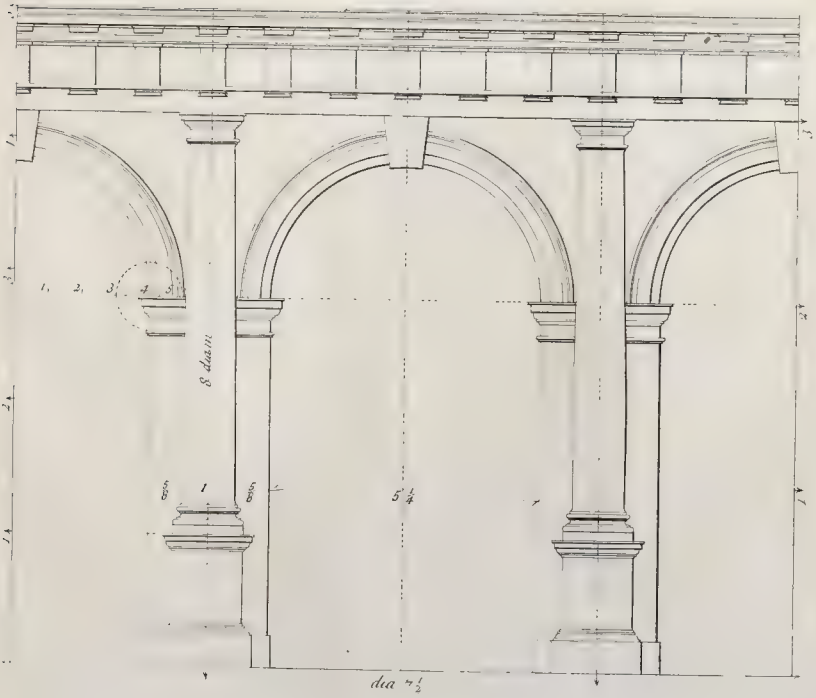
dia 6 1/4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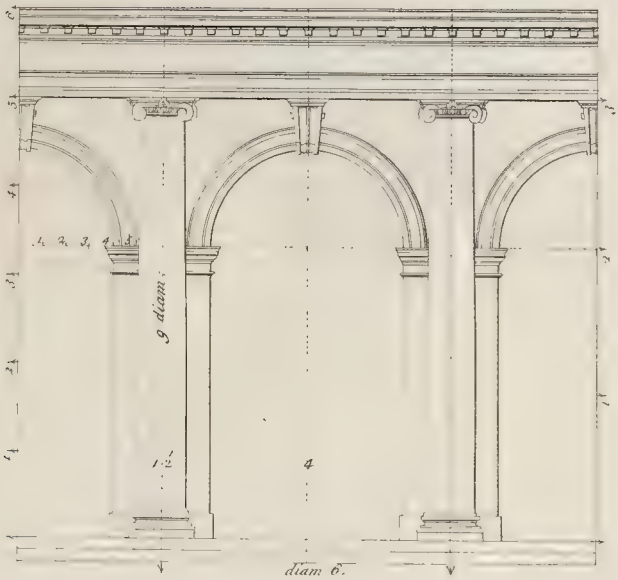
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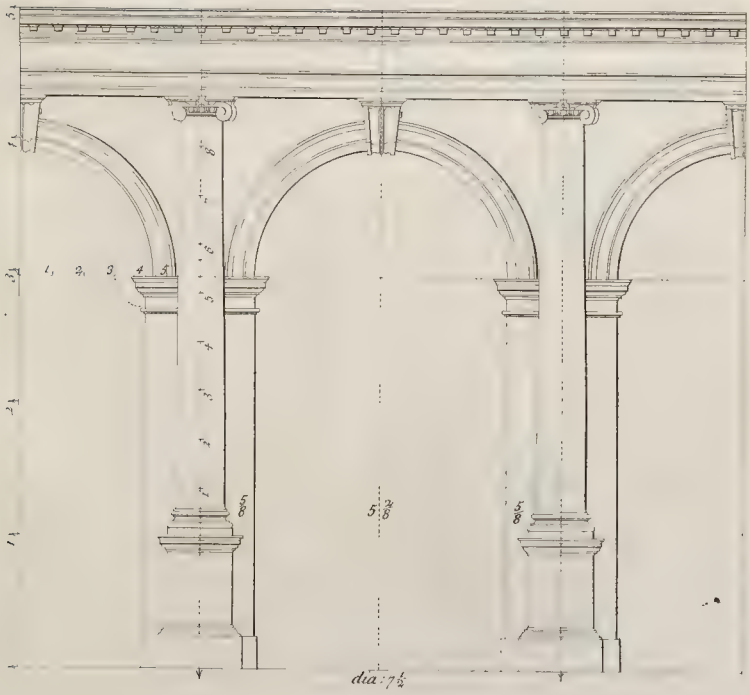
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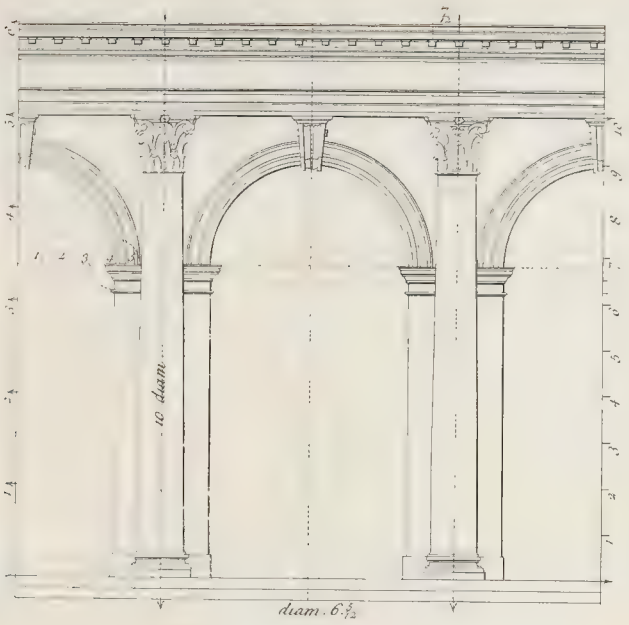
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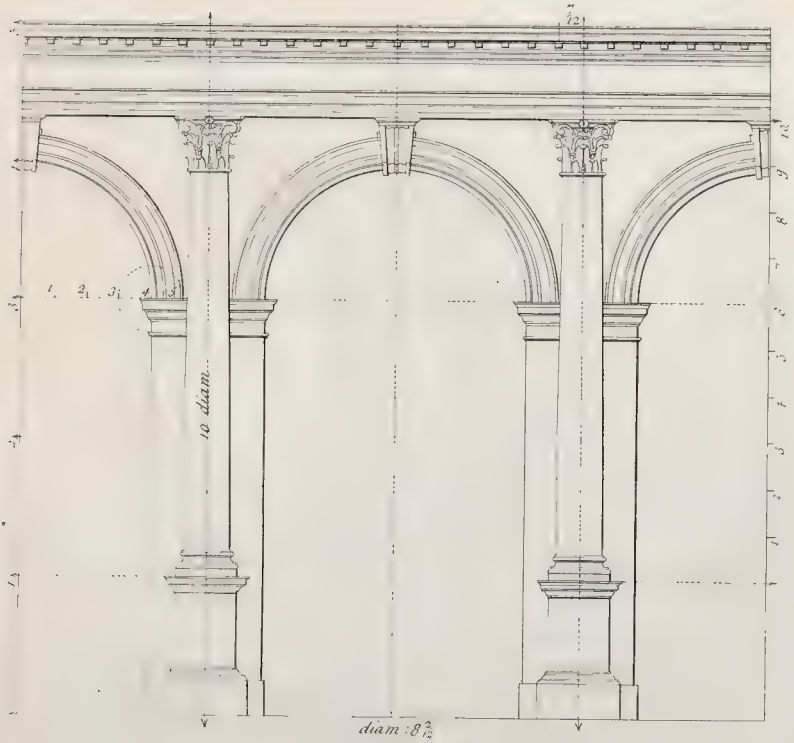
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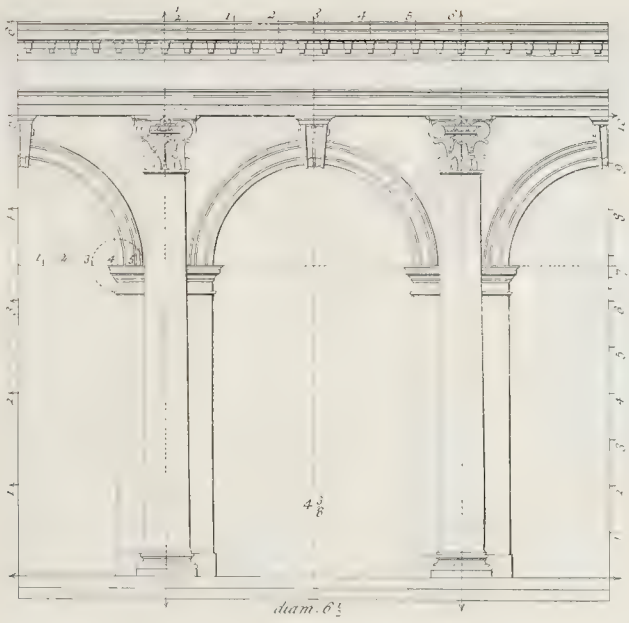
diam. 8 3/12



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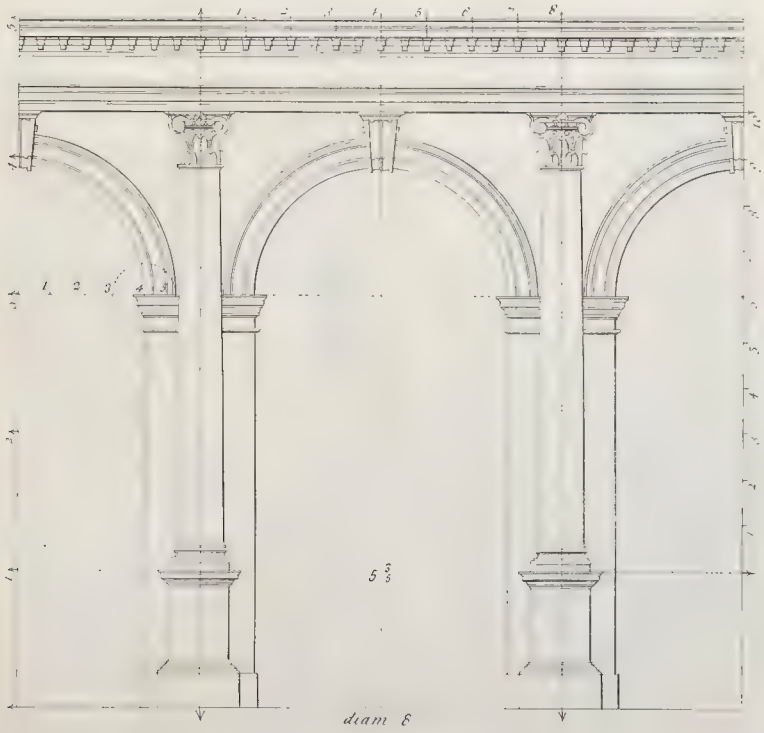
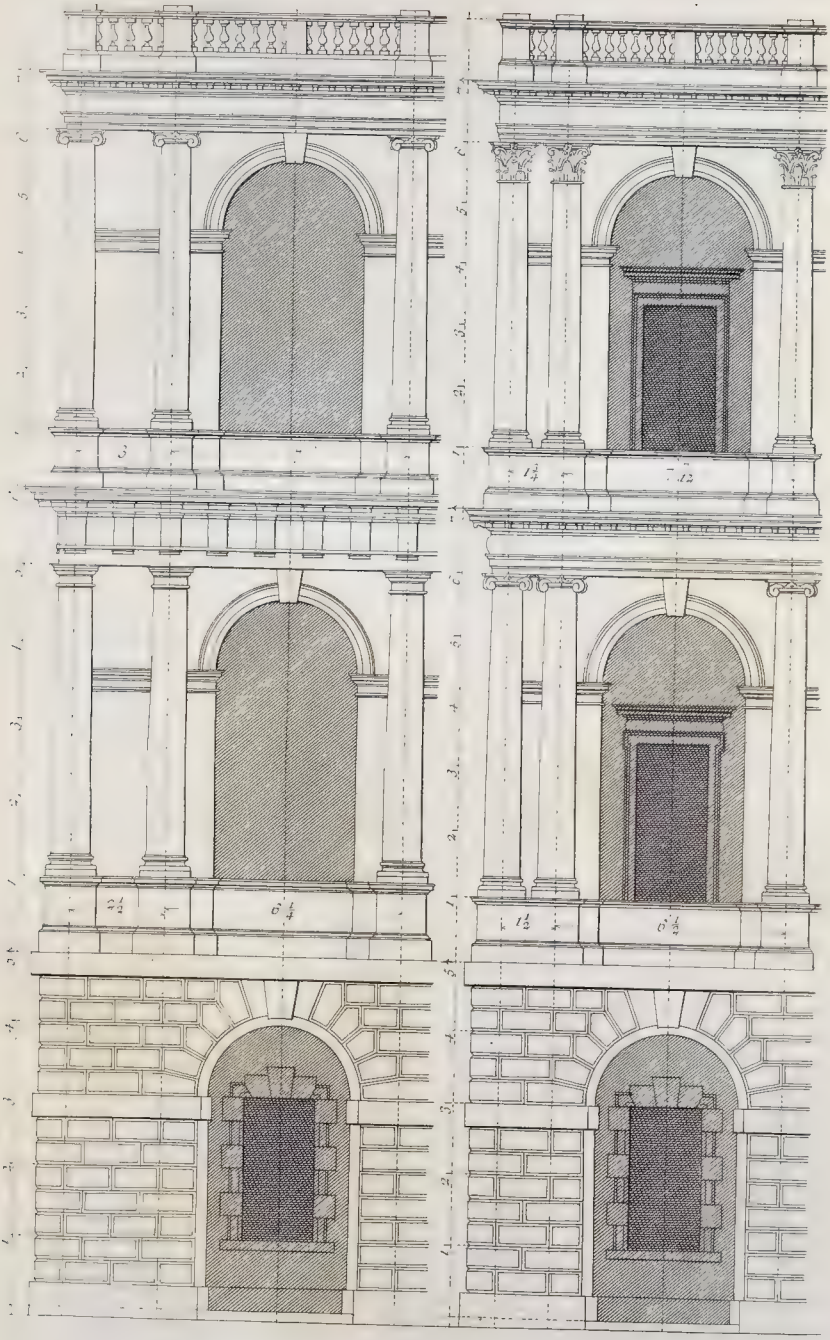
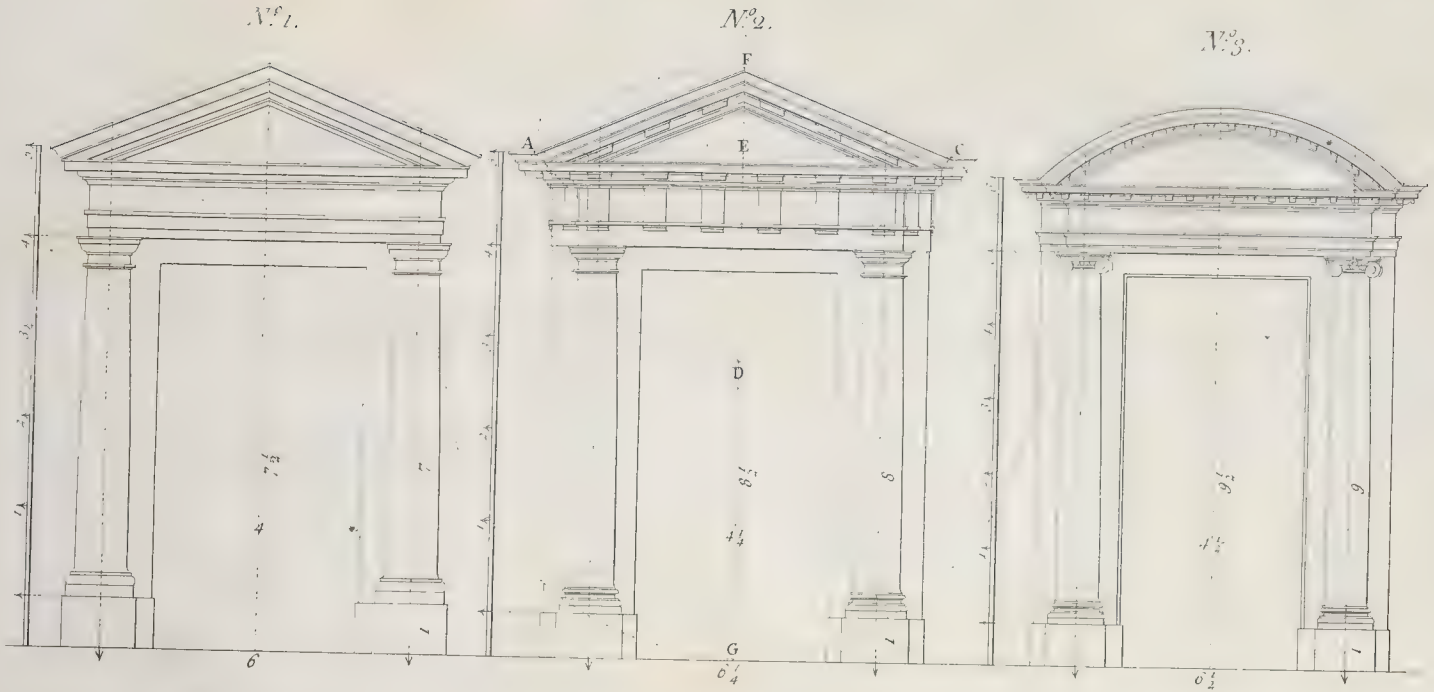


diam 8





Tuscan

Dorick

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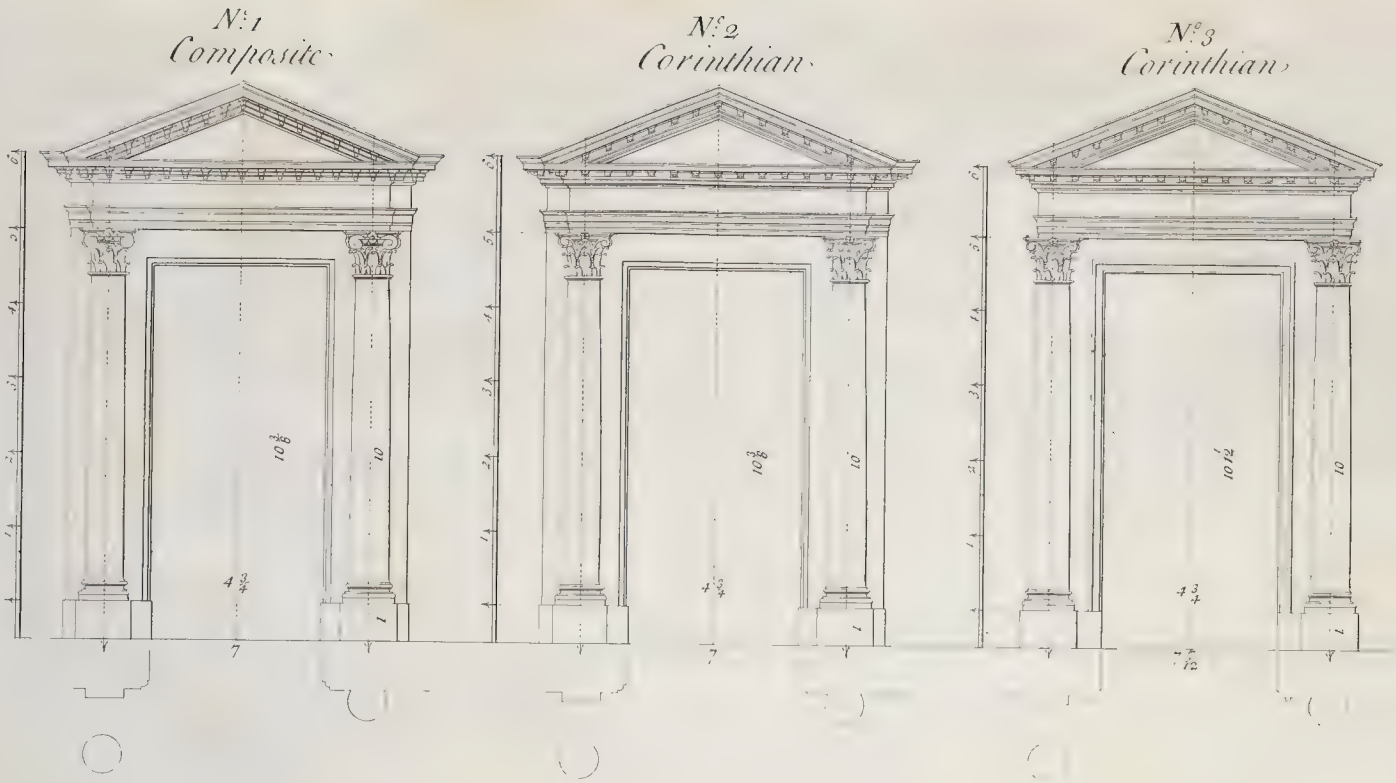
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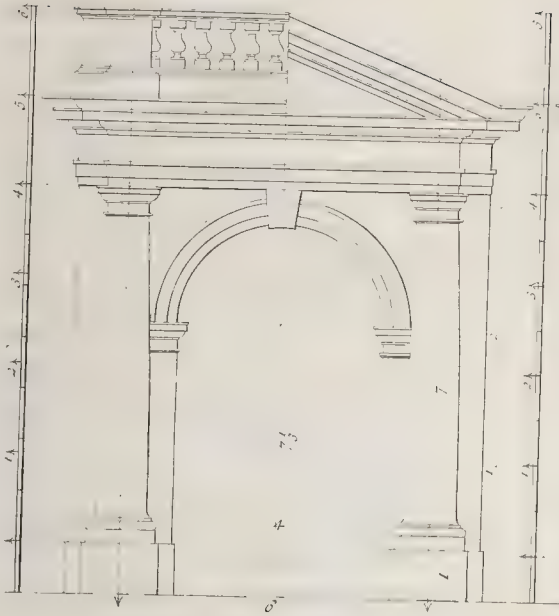
N.2
Corinthian.
N.3
Corinthian.

Tuscan N.º 1



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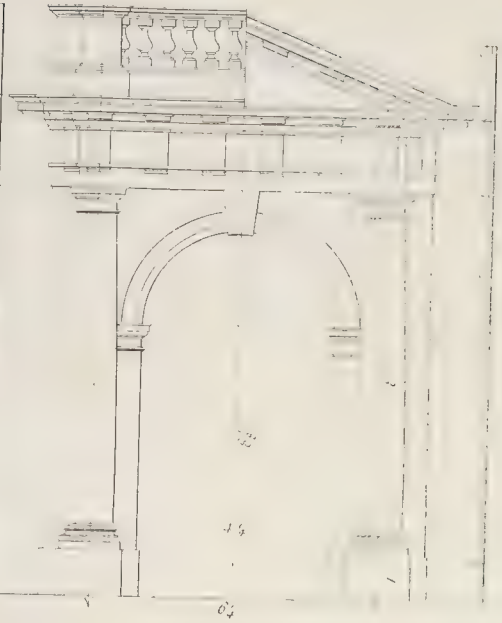

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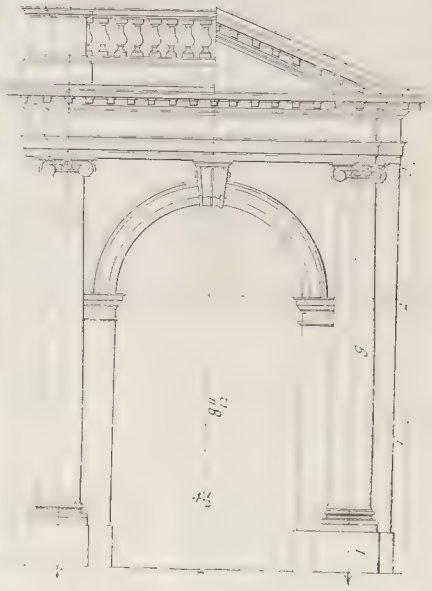

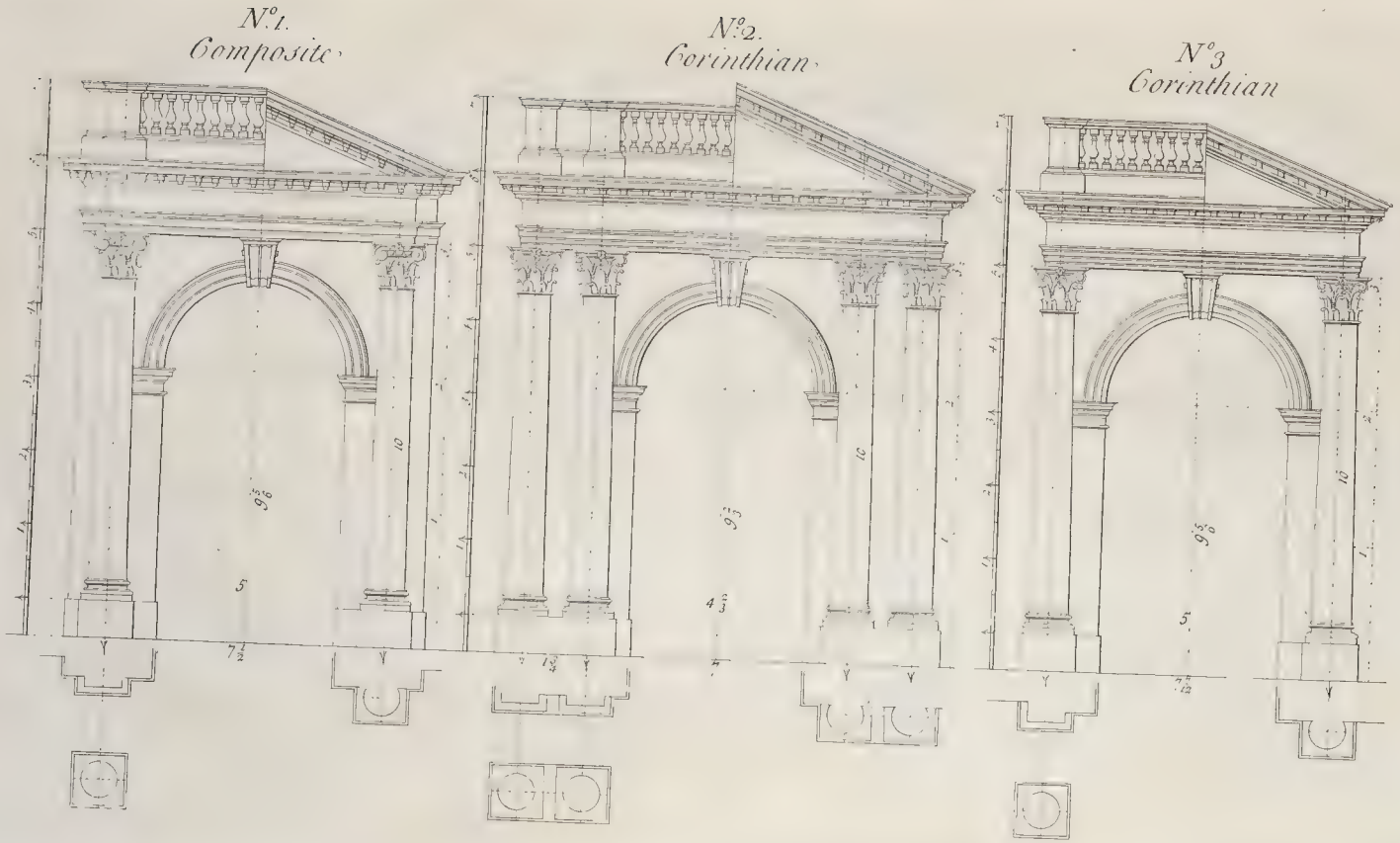
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N°2.
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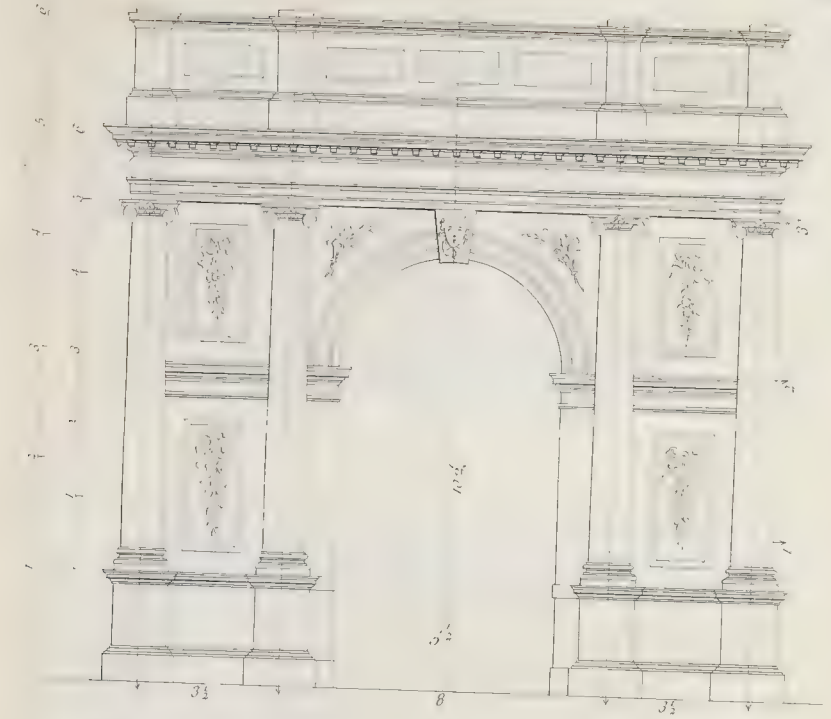
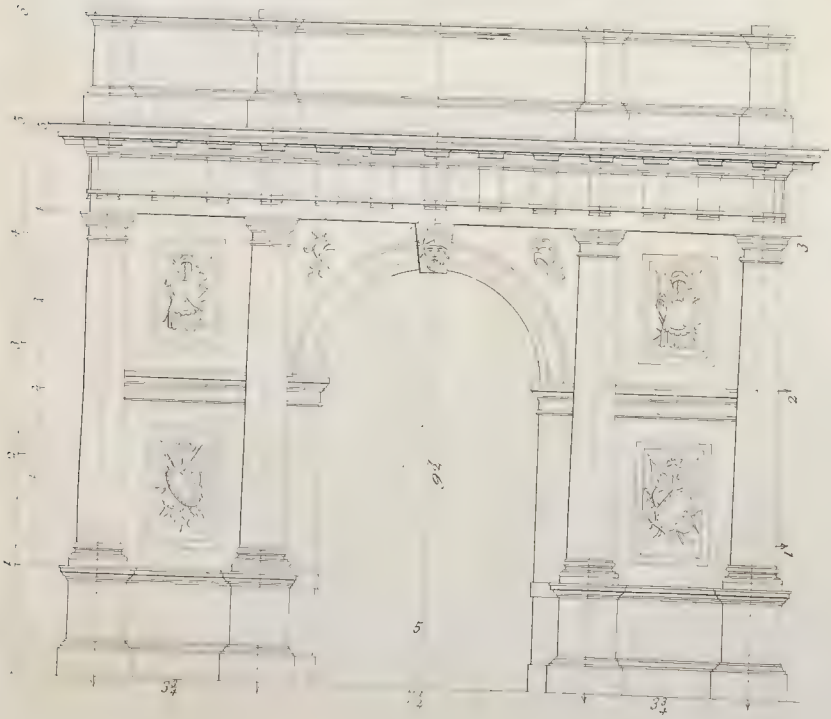
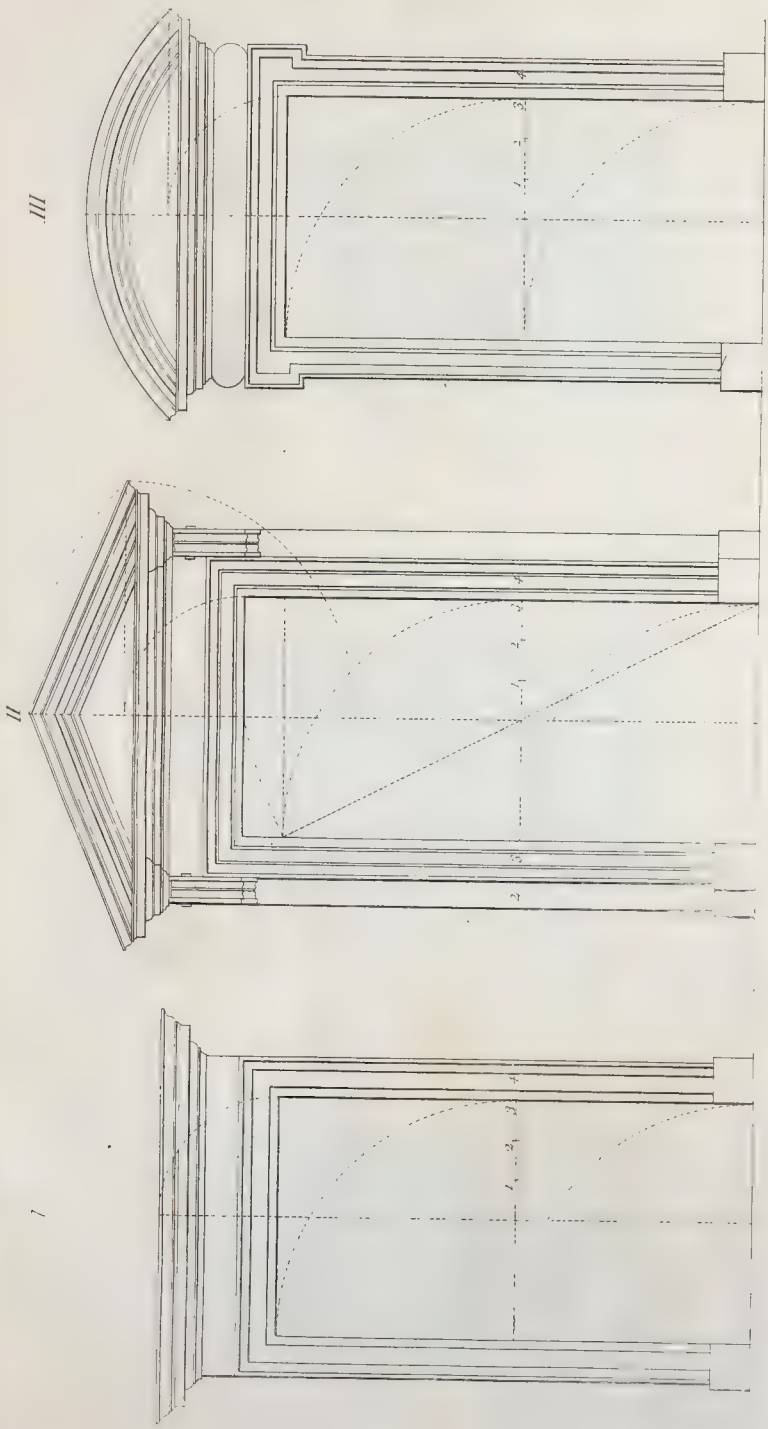
N°3
Corinthian



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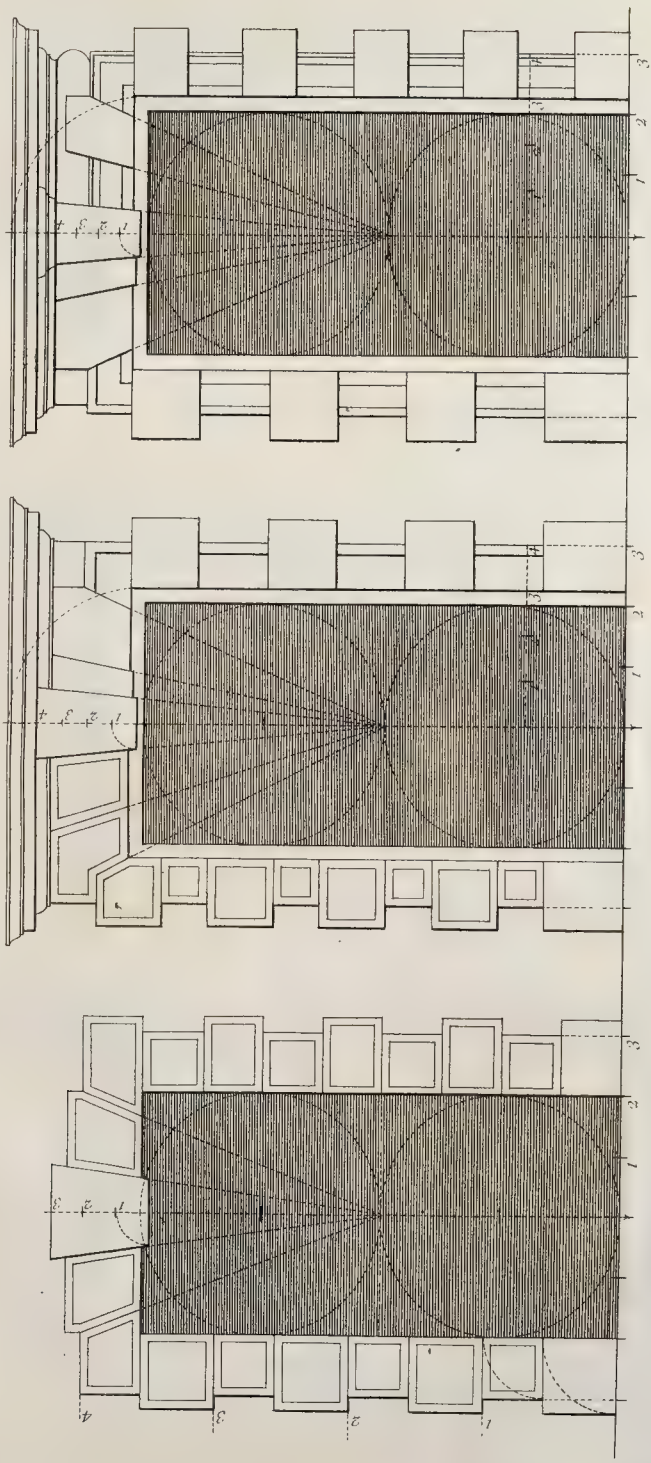

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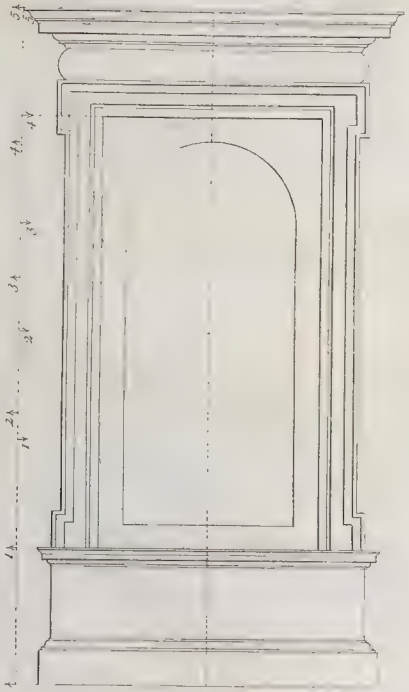

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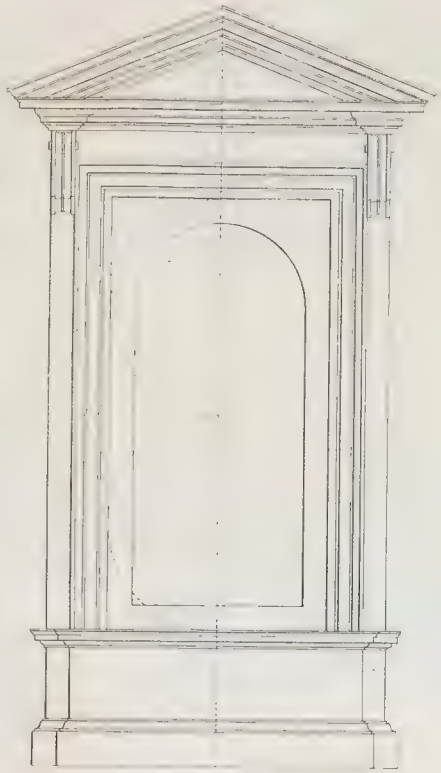

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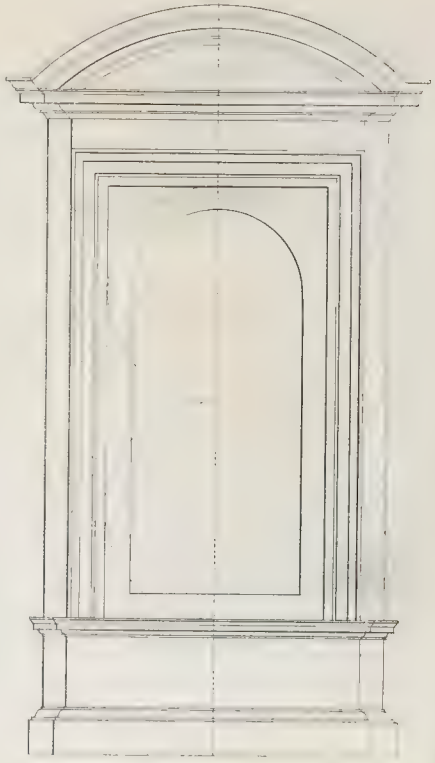

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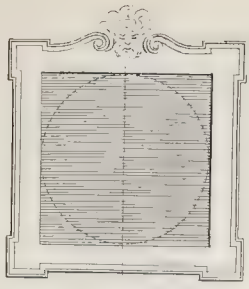

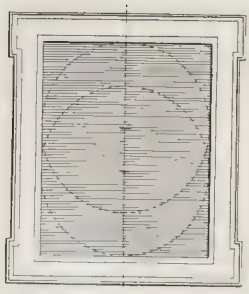

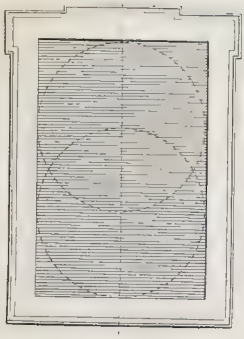

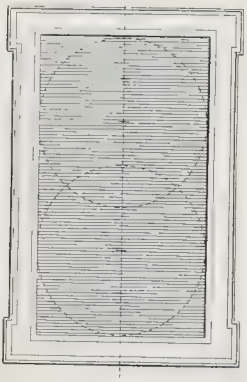

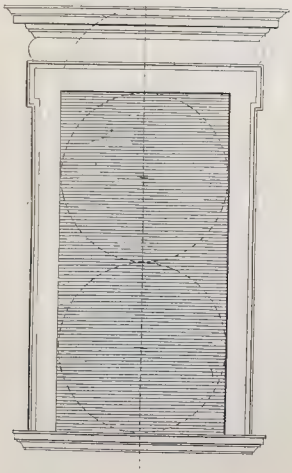

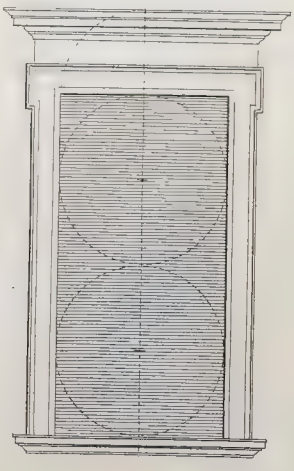

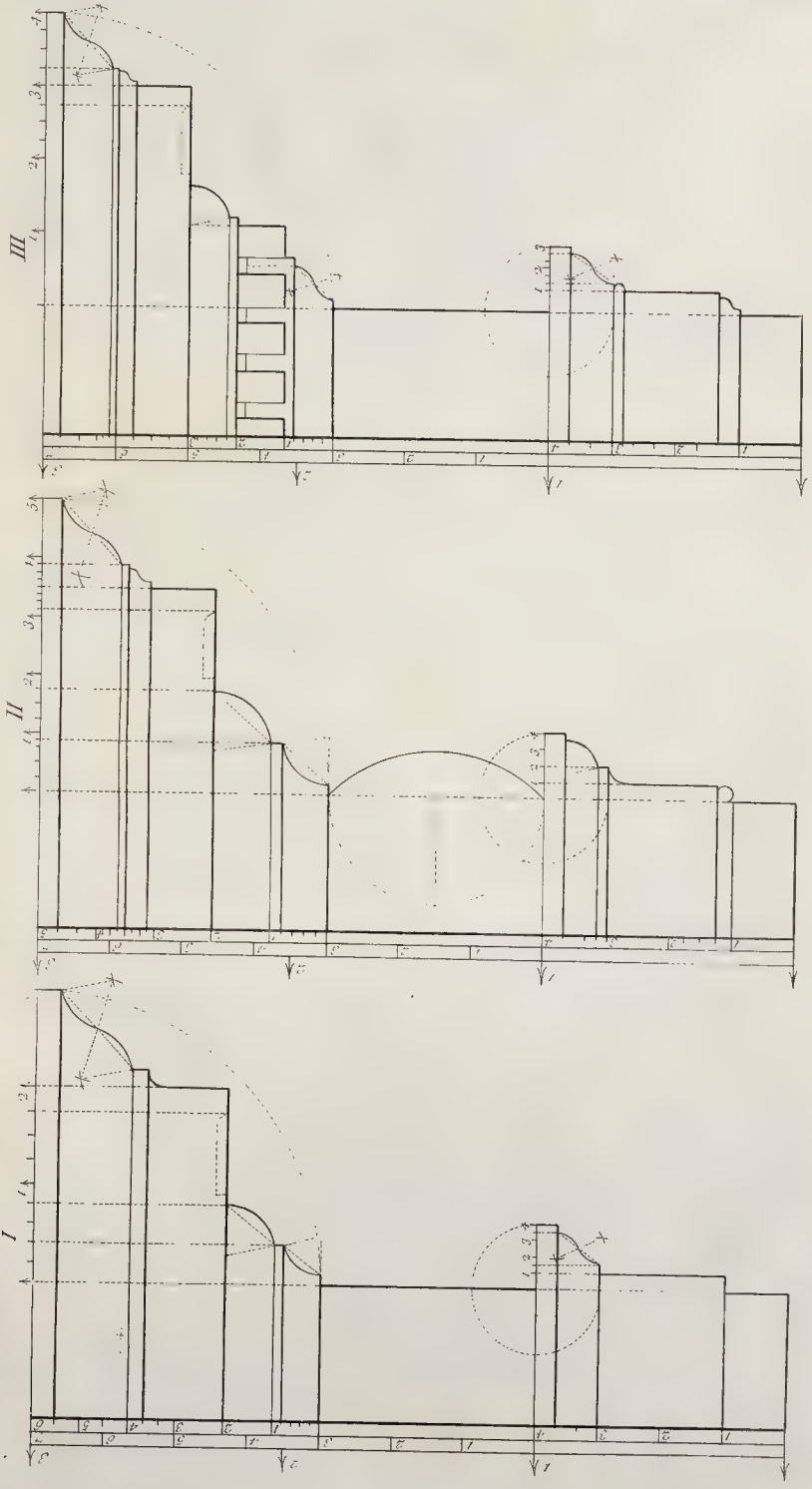
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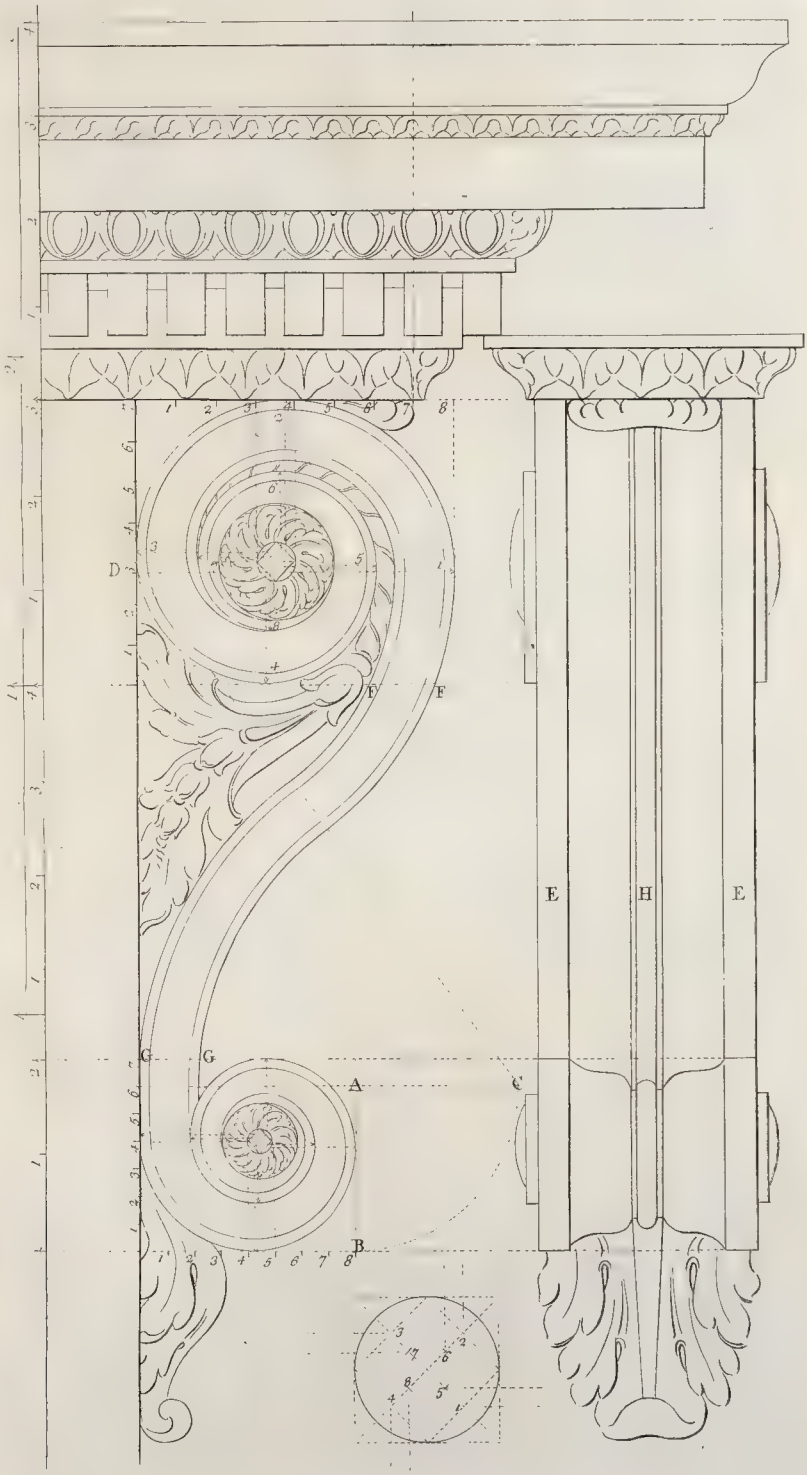
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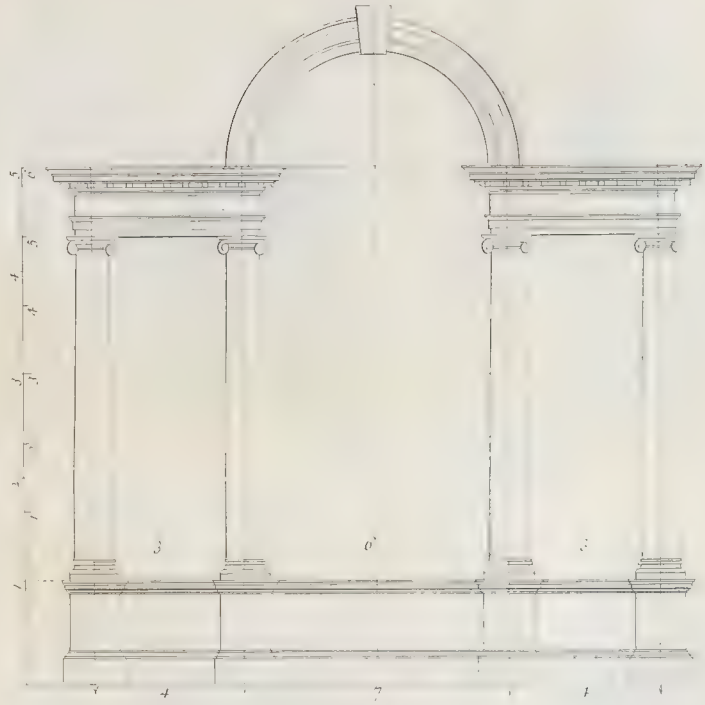
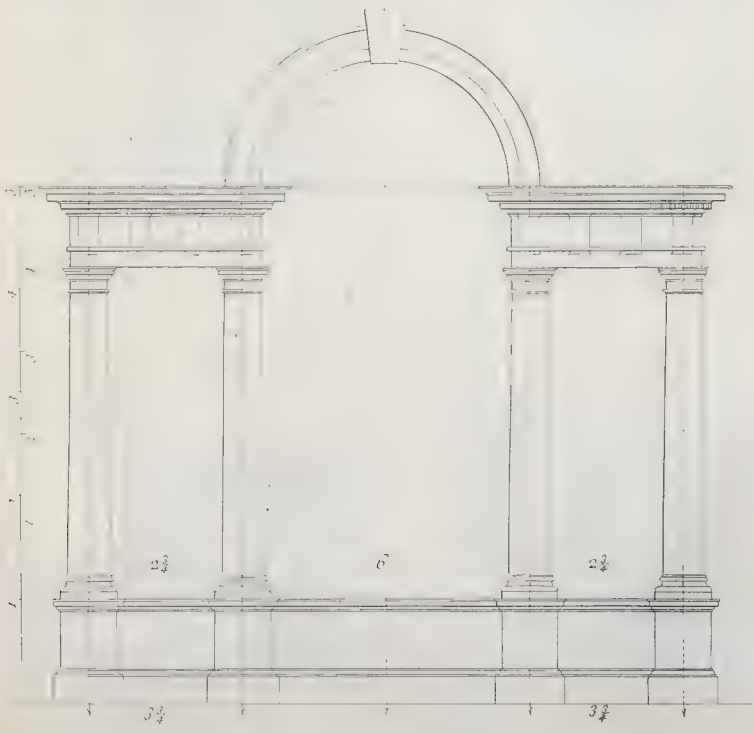
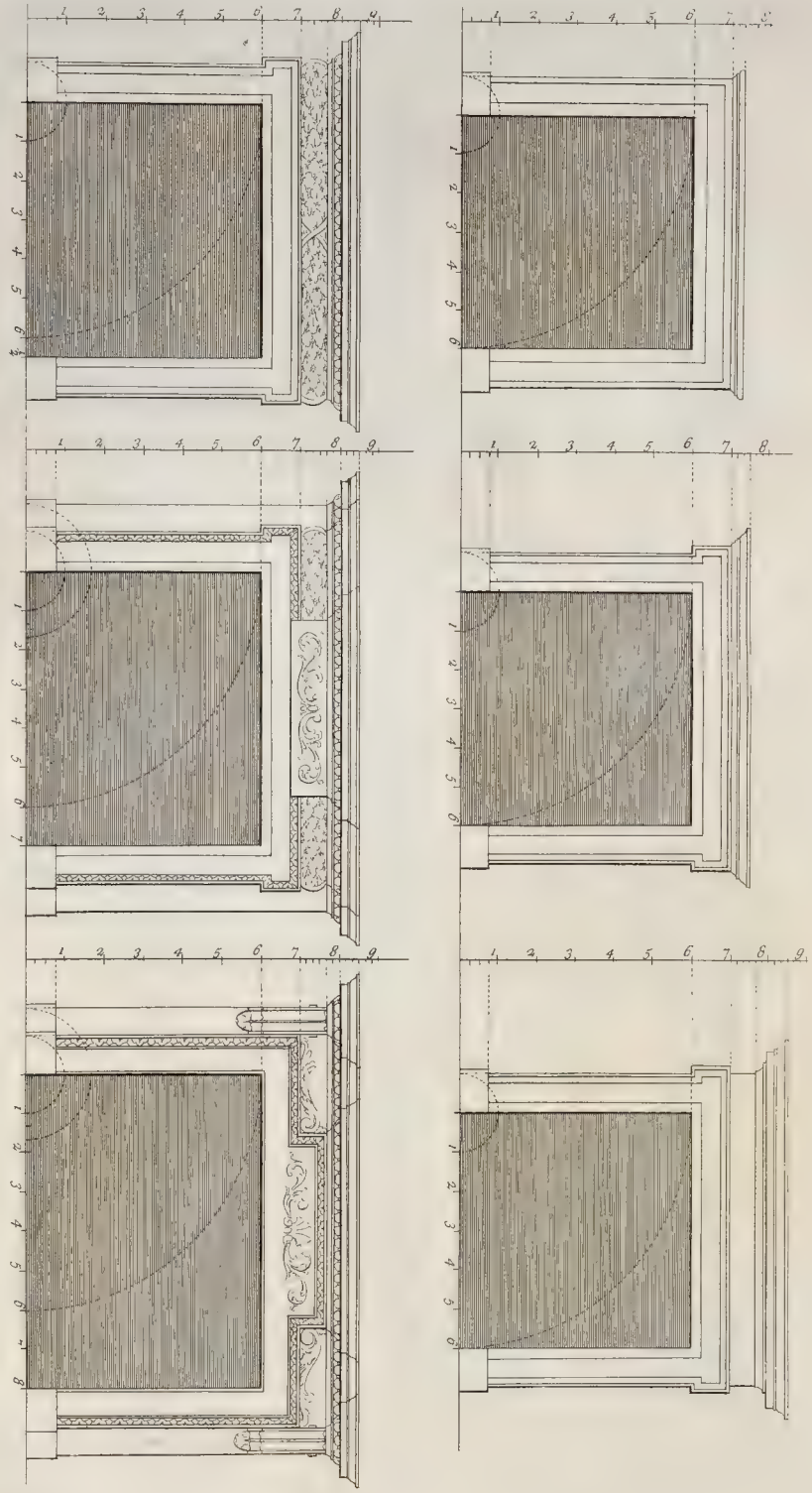
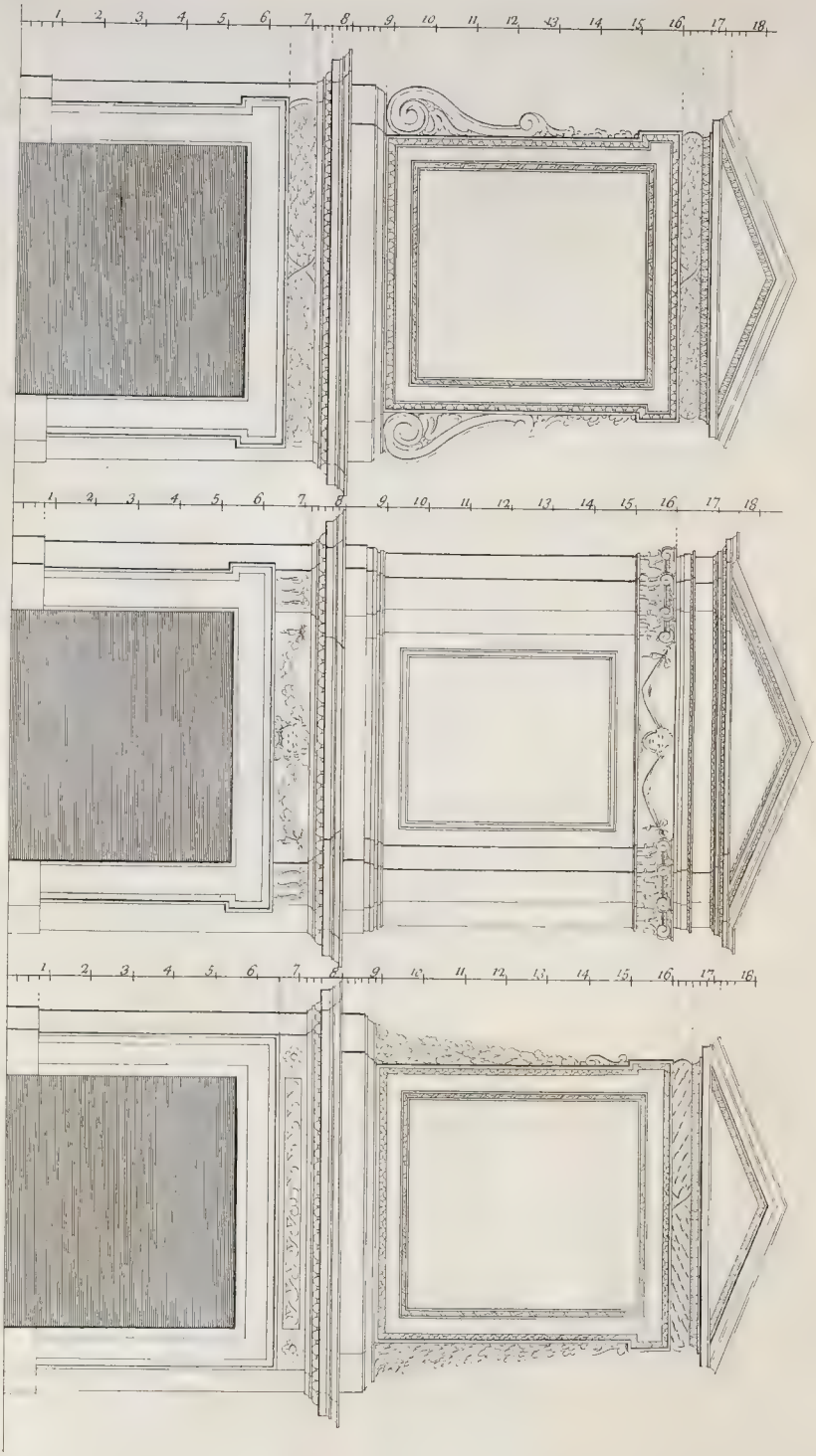
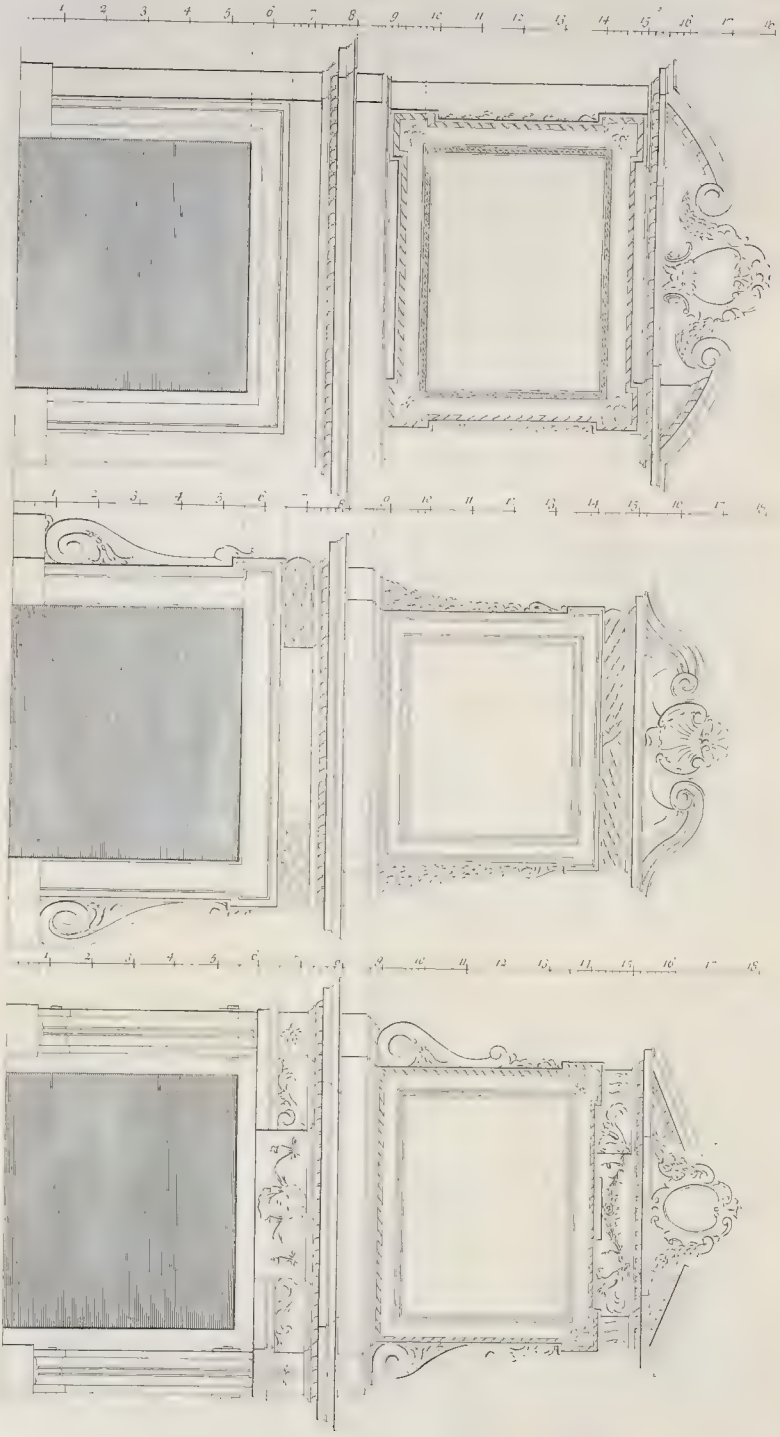


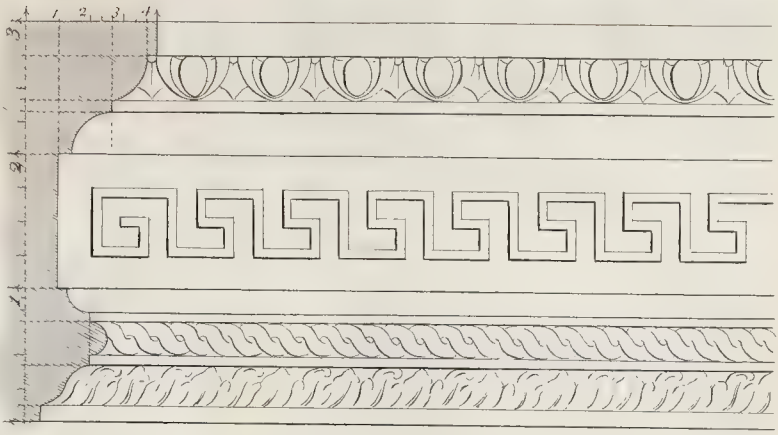




XLIX



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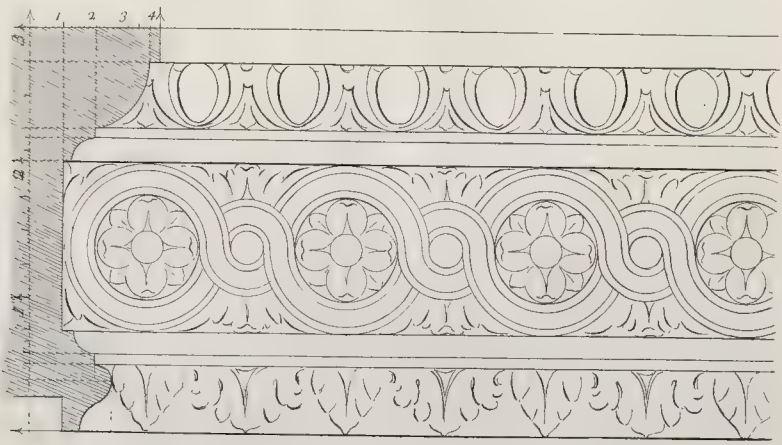
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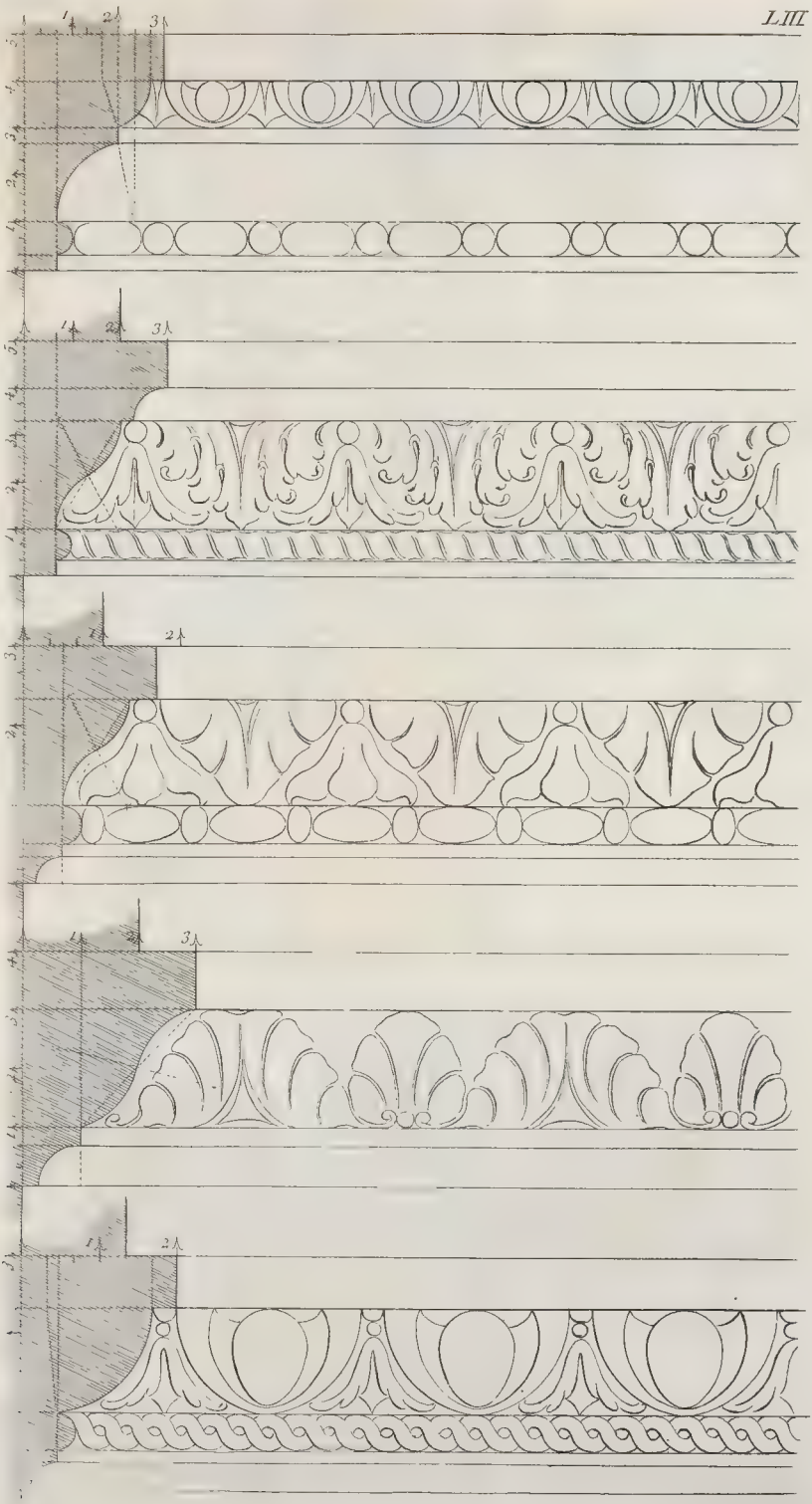
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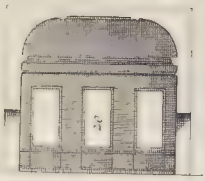
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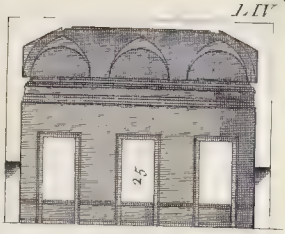
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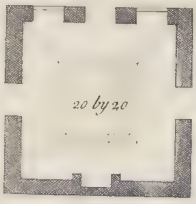
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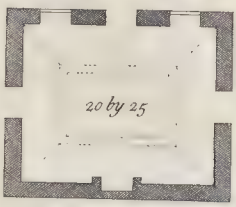
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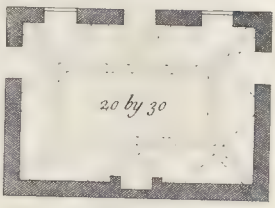
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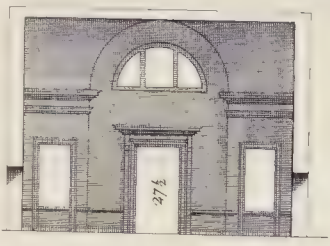
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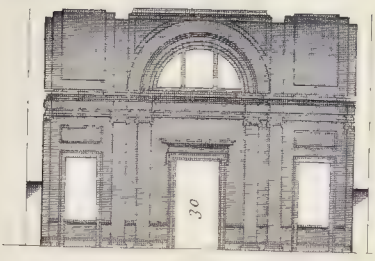
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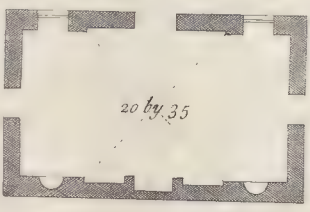
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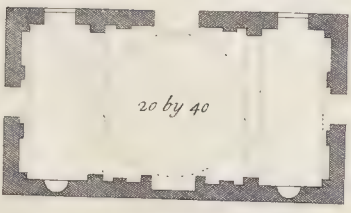
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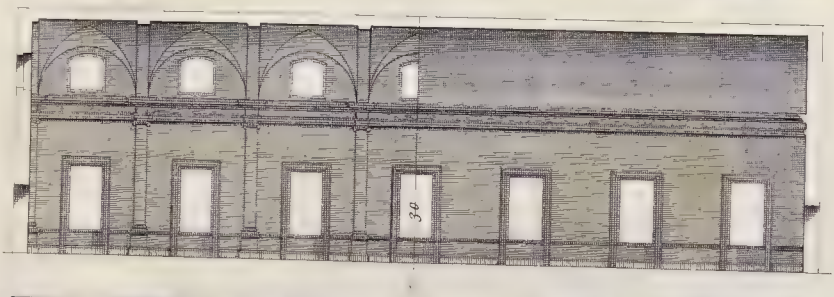
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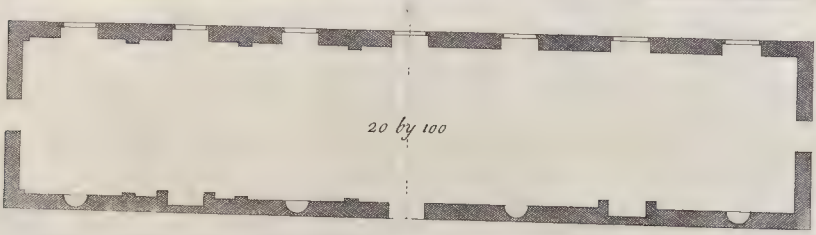
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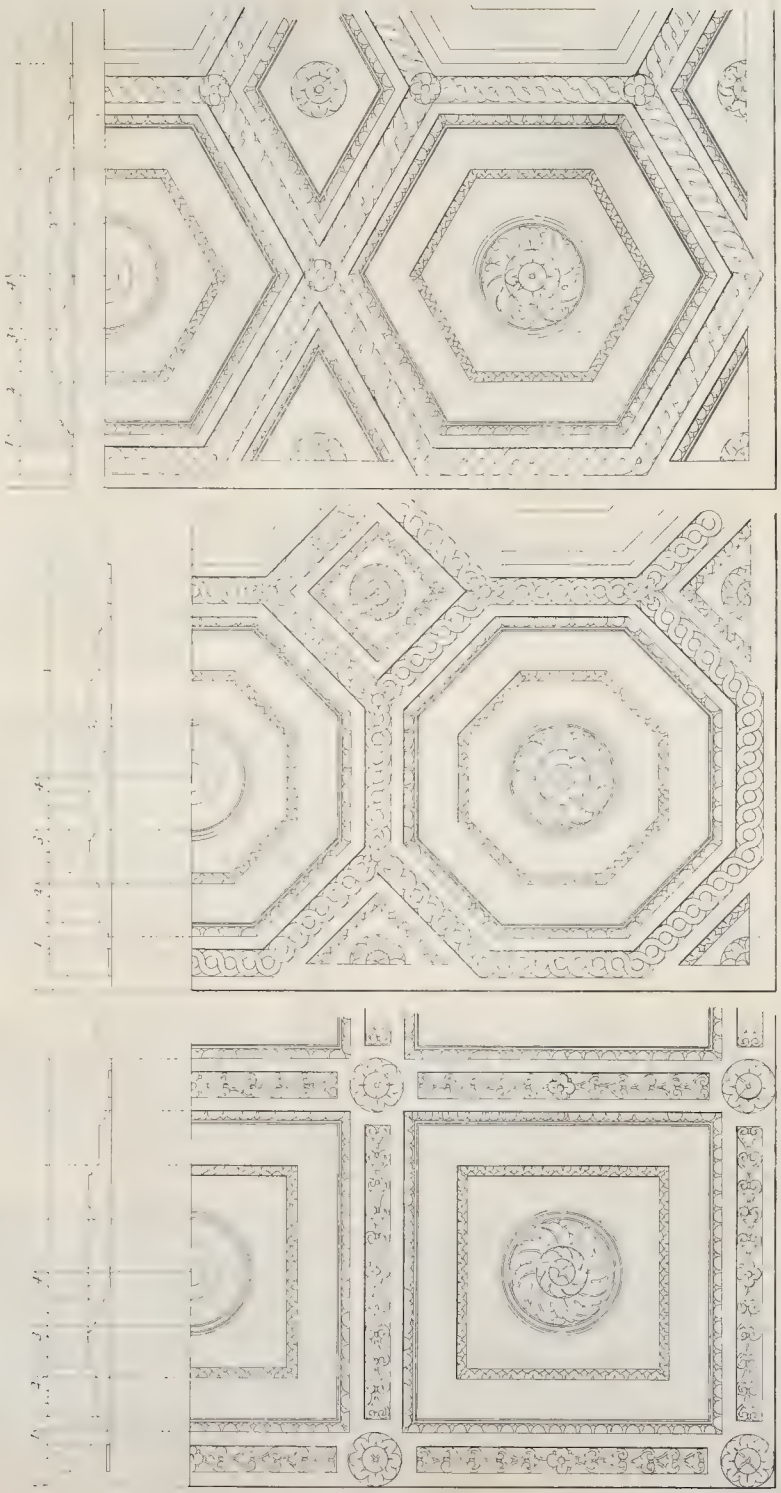

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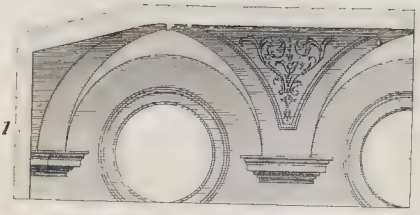

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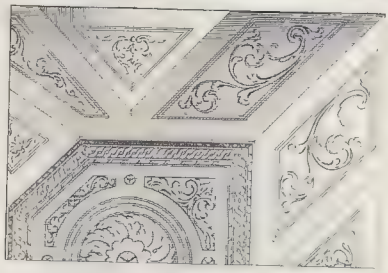

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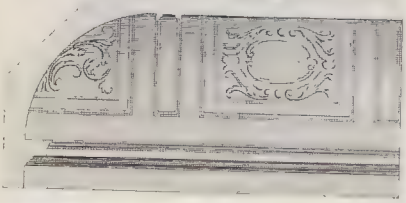

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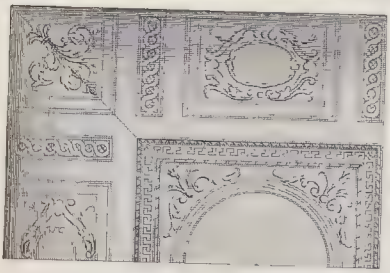

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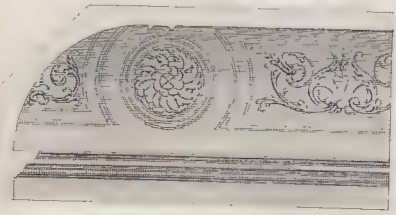

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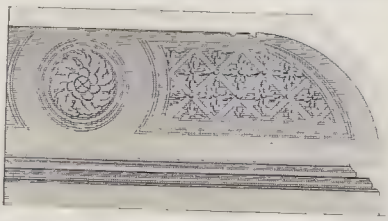

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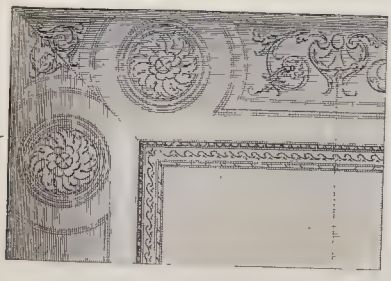

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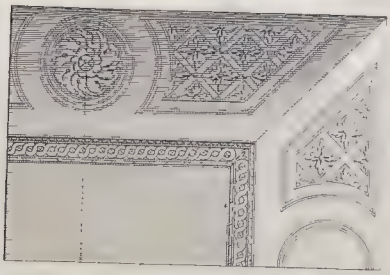

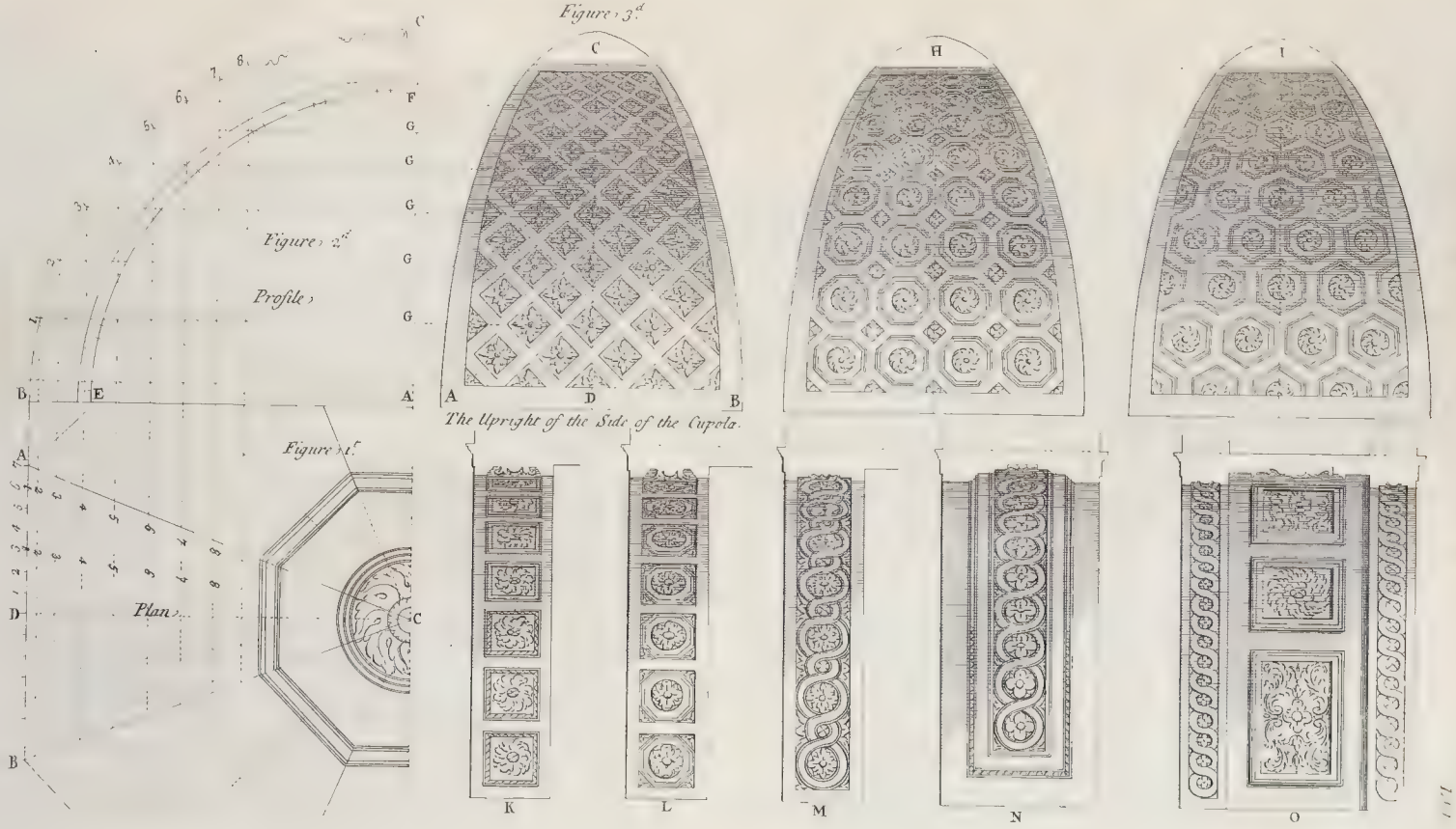
Figure 3.d
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The Upright of the Side of the Cupola.
Figure 2.d
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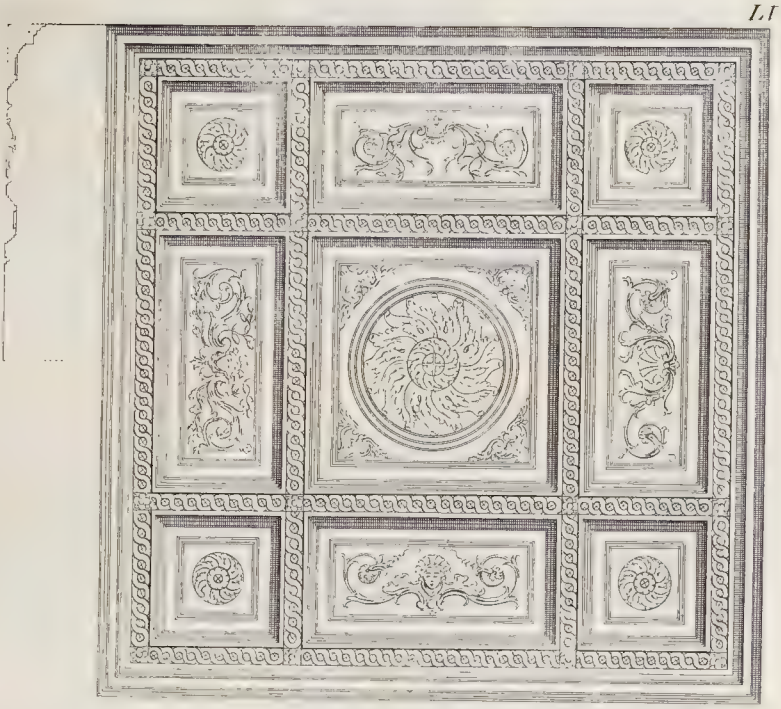

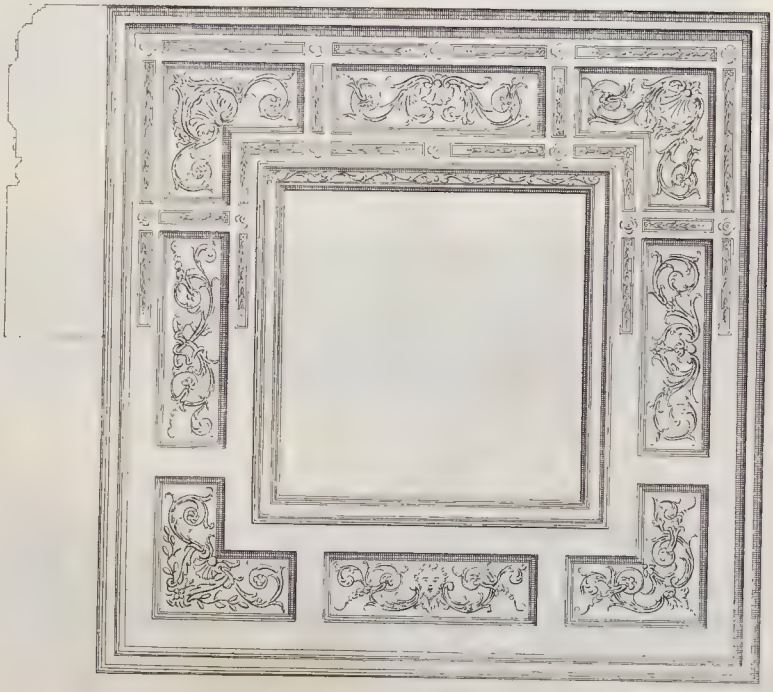

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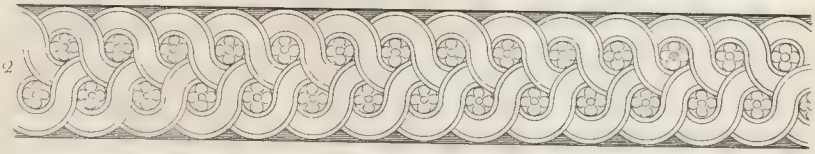

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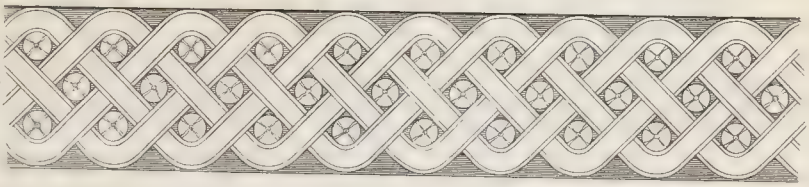

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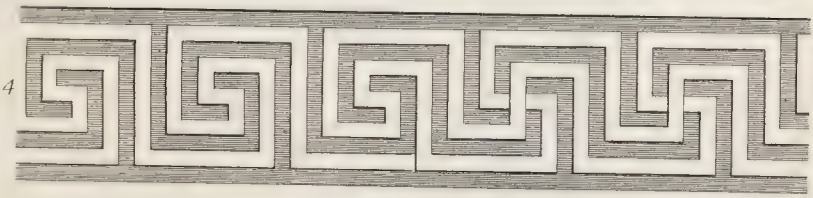

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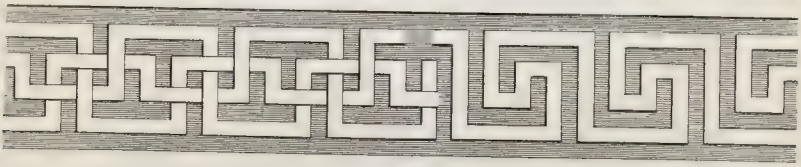

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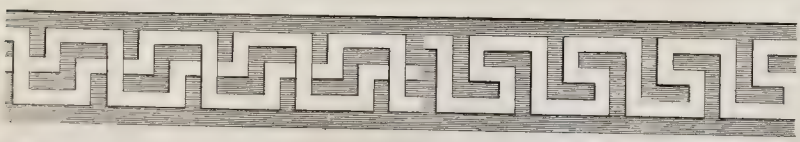

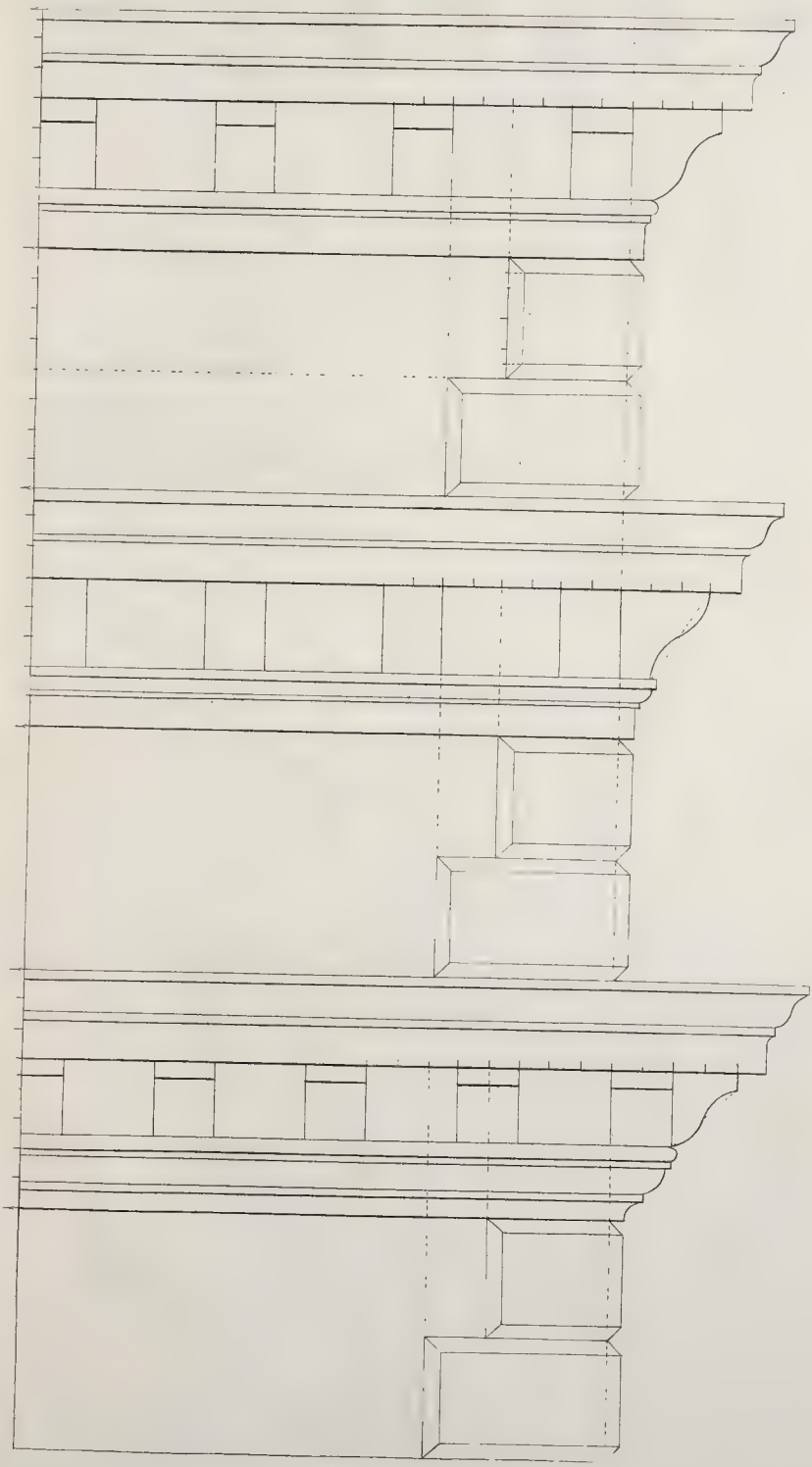

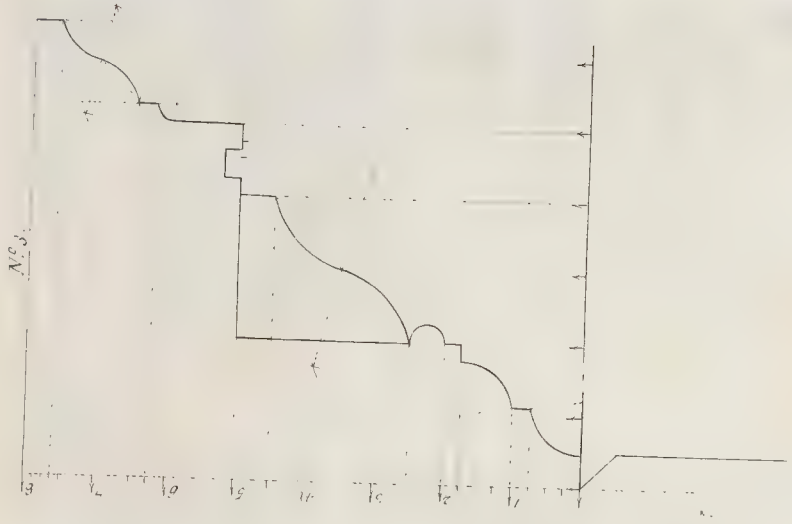
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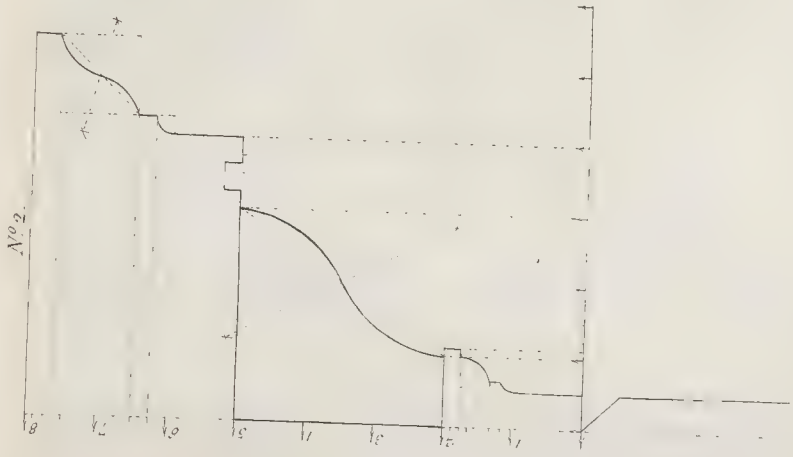
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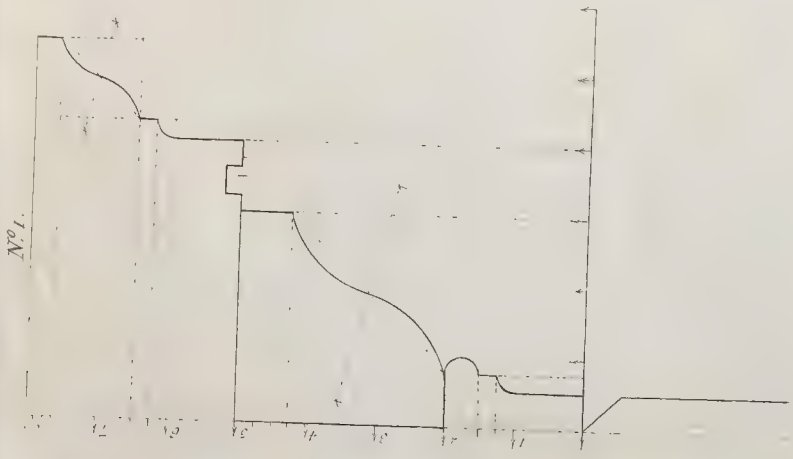
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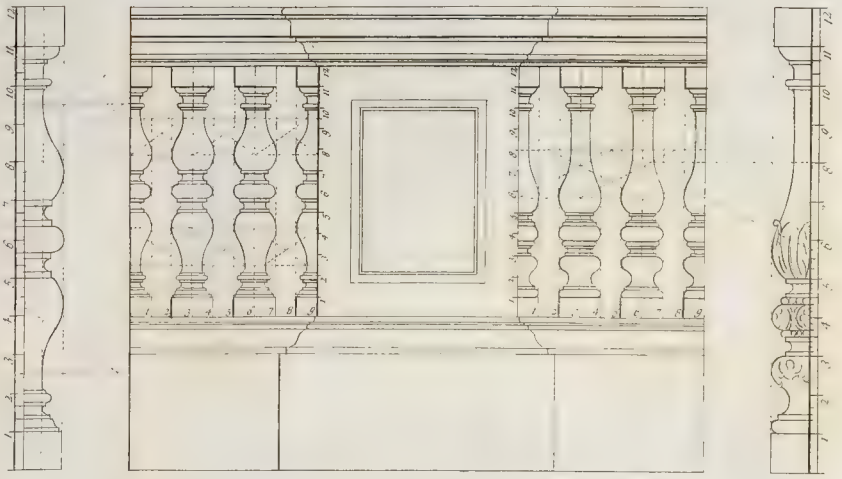

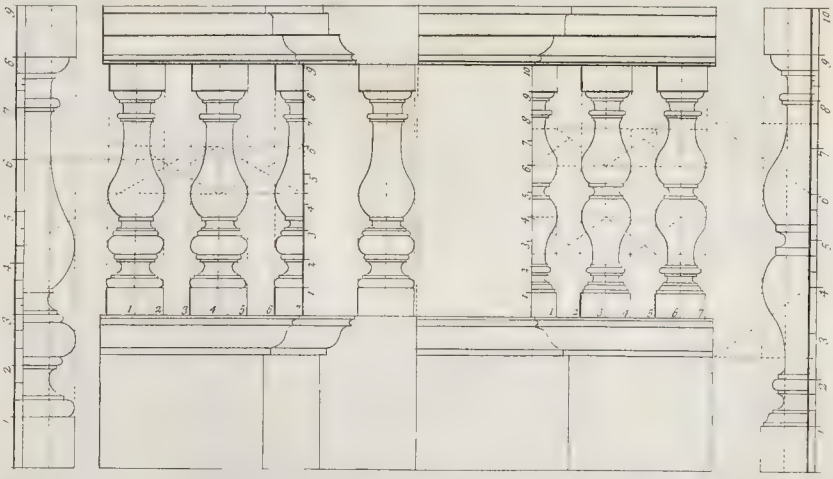

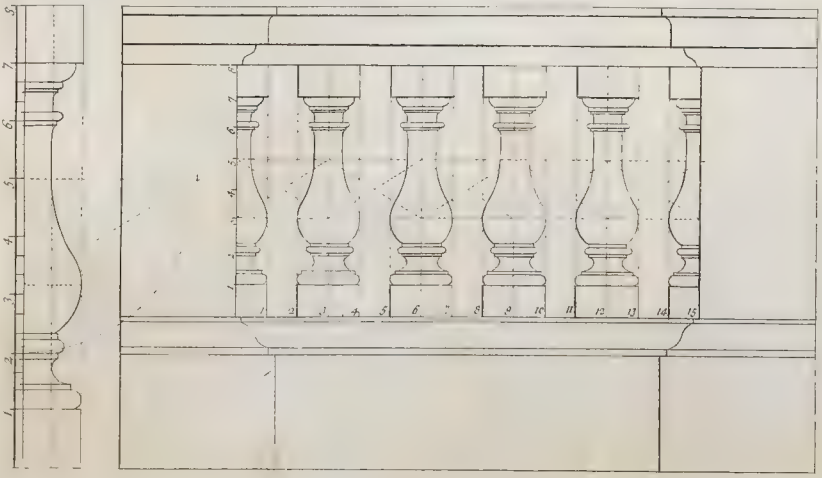

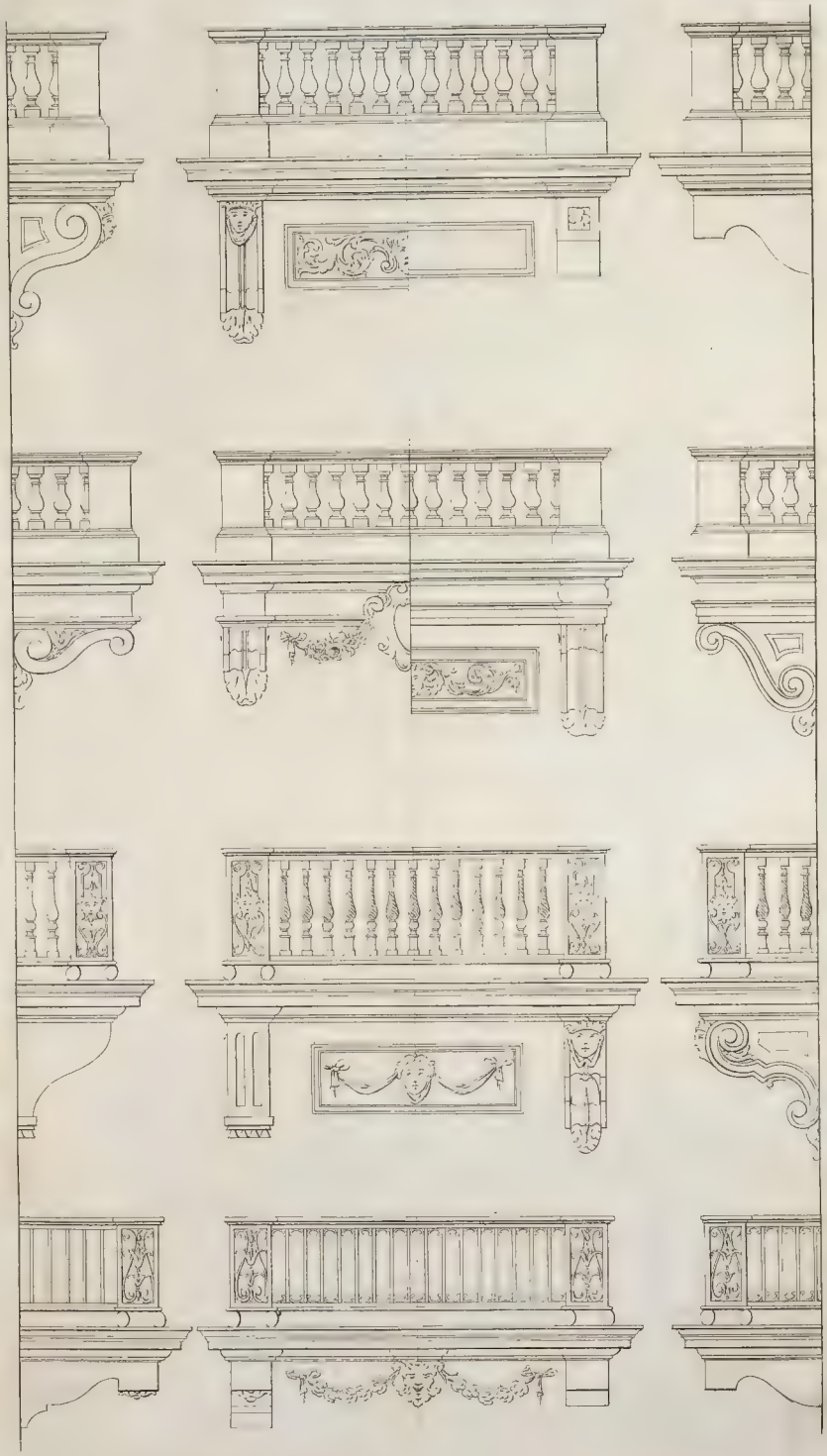

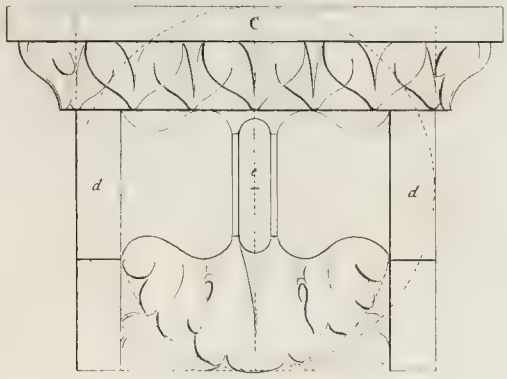
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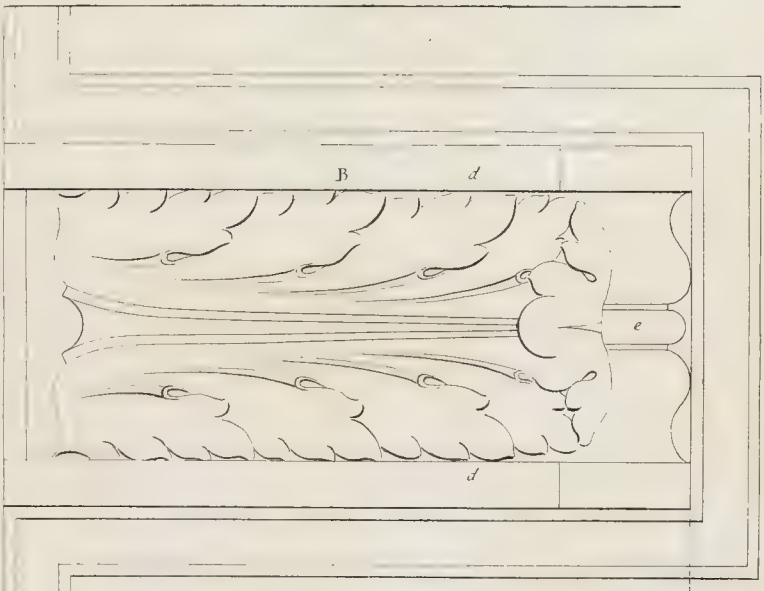
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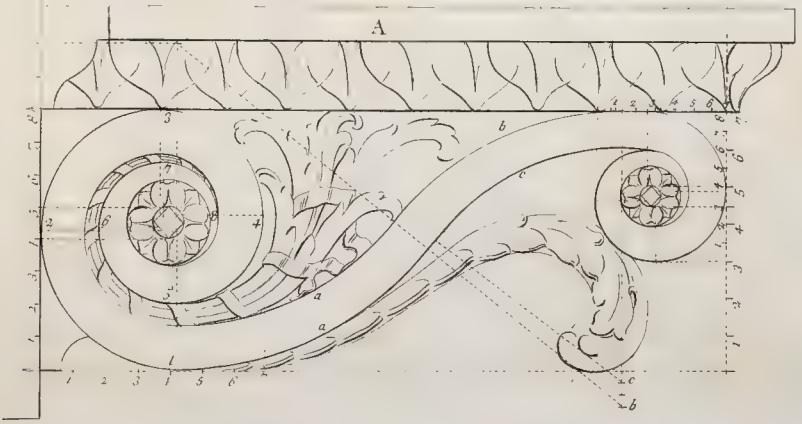
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